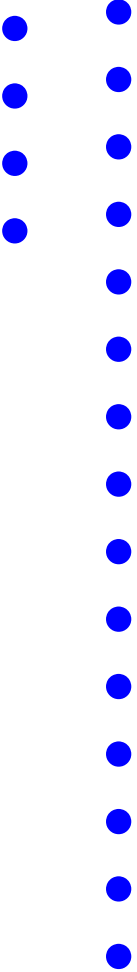




Engineering Co-op & Career Services  
[www.coop.eng.umd.edu](http://www.coop.eng.umd.edu)  
301.405.3863



# :: Resumes & References

## WRITING AN EFFECTIVE RESUME

A resume is a brief summary of your education, work experience, and activities. Your resume should focus on those aspects of your background which are most relevant to your current career objective. It should be easy to read, concise, and accurate. Details and specifics should be saved for an interview.

This packet includes information on the following topics:

- Resume Writing Resources & Guidelines
- Resume Sections
- Making Your Resume Marketable to Employers
- Turning Responsibilities into Accomplishments
- Action Word List
- Sample Reference Sheet

## RESUME WRITING RESOURCES

The Co-op Office offers Resume Writing Workshops that teach you how to write a resume or improve the one you already have. The office also has a number of books on resume writing available for your use, including several geared specifically for engineers. Stop by the Co-op Office to check out these useful resources and to sign up for a workshop. Workshop schedules are also listed on our web site, [www.coop.engr.umd.edu](http://www.coop.engr.umd.edu) under “Students,” then “Workshop Schedule.”

The **University Career Center** (3100 Hornbake Library) also sponsors Resume Writing Workshops on a regular basis. Workshop schedules are listed on the Career Center’s web page, [www.careercenter.umd.edu](http://www.careercenter.umd.edu) or call the University Career Center at (301) 314-7225 to find out when the next workshop will be held.

## GENERAL RESUME GUIDELINES

- ***Place relevant information toward the top of your resume.***  
Sections most relevant to your objective should be at the beginning of your resume. Within sections, try to place the most relevant information first.
- ***Emphasize your strengths.***  
Don't worry if you have limited relevant experience yet (that's why you're seeking a co-op or internship!). But do try to show employers that you are hard-working, energetic, and enthusiastic.
- ***Be consistent.***  
Make sure you use bullets, bolding, underlining, and italics in a uniform style. Use an easily read font such as Times New Roman or Arial (10, 11 or 12 point). Try to keep your top and bottom margins even.
- ***Don't use full sentences.***  
Write in phrases starting with a capital letter. Do not use first person pronouns: I, mine, my, me, etc. Avoid acronyms such as UMCP.
- ***Use “action” verbs to describe your accomplishments.***  
Avoid phrases such as “responsibilities included” and “duties assigned.” See the “*Action Word List*” in this handout for ideas.
- ***Keep it short and avoid the fancy resume paper.***  
Unless you have significant engineering experience, your resume should be on one page. Recruiters prefer resumes to be on regular instead of bond paper to avoid paper jams in copy machines.

# POSSIBLE RESUME SECTIONS

## 1. CONTACT INFORMATION

Include your name, present and permanent addresses, phone numbers with area codes, and e-mail address. It is crucial that this information is accurate and up to date at all times! Do not make it difficult for an employer to reach you; the job might be filled in just a few days.

## 2. OBJECTIVE

You may include an objective describing the type of position you are seeking (co-op, part-time or summer). If you are interested in more than one type of position, list them all. Employers are often hiring for several positions at once, and resumes without objectives may not reach the appropriate person.

Specific position: *To obtain a summer position in civil engineering with an emphasis on water resources and environmental issues.*

For more than one type of job: *Seeking a cooperative education, summer, or part-time position in the civil engineering field.*

All of the subsequent information on your resume should relate to and support your objective as closely as possible.

## 3. EDUCATION

Include your degree, major and expected graduation date (including your co-op semesters), name of university and location (city & state).

Example:                      **University of Maryland**, College Park, MD  
B.S., Aerospace Engineering, expected May 2007 (with co-op)

The Education Section may also include:

- Other colleges you have attended (but generally omit high school)
- Overall GPA: most employers tell us they want to see this.
- Study abroad
- Honors/Awards (include dates received)
- Course highlights
- Indication that you're responsible for financing a certain percentage of your college expenses

## 4. HONORS (If not listed in Education section)

List scholarships, academic awards, honors, along with dates received.

## 5. COURSE HIGHLIGHTS (If not listed in Education section)

It is more effective to describe projects and accomplishments rather than just to list classes. Include only upper level courses that are most relevant to your major. Use descriptive titles, not course numbers.

## 6. SKILLS

If you have knowledge of computer languages, computer software, operating systems, etc., list them here. Also, if you have drafting skills, are fluent or proficient in foreign languages, or if you have any other work-related skills that may increase your chances of being selected, list them here. If you have ever obtained a security clearance for a previous job, include that as well.

## 7. EXPERIENCE

This section may include paid jobs, internships, and significant volunteer jobs. List most recent experiences first. Include the job title, employer, city, state, dates employed, and a succinct description of your accomplishments.

Use **action words** in your description. Avoid the phrases *Responsible for* and *Duties included*. **Be specific** about your accomplishments in terms of dollars, percentages, dates, etc. Think about the skills you acquired in the position. Consider how your work impacted the department or organization. Mention promotions.

## 8. ACTIVITIES

Most recruiters say that they seek well-rounded individuals to work in their organizations, so consider highlighting your extra-curricular activities. Include involvement in professional societies, student organizations, community organizations, fraternities, sororities, etc. If you held a position with responsibility, be sure to include details such as number of hours invested, projects completed, and any skills you may have developed. Your resume will be greatly enhanced by showing involvement in extra-curricular activities, so if you are not yet active in these, get involved now!

## 9. CITIZENSHIP STATUS

Since many co-op jobs require U.S. Citizenship, if you are a foreign born U.S. Citizen, you may want to list the date you received your citizenship. If you are not a citizen, but you are a permanent resident, you may want to include that information as well.

## 10. REFERENCES

Only include this statement if you have room on your resume. List only as "References: Available upon request." Specific names should not be listed on your resume. Prepare a separate sheet of names and contact information of references to be given to an employer if he/she requests it. (See example in this packet.)

DO NOT list social security number, marital status, height, weight, or anything else that has no relevance to your qualifications.

# MAKING YOUR RESUME MARKETABLE TO EMPLOYERS

## KNOW YOUR INDUSTRY:

Brainstorm all of the possible **keywords** from your industry that you have learned through your academic and professional life. Then try to incorporate them into your resume within the appropriate sections.

### Examples:

Directed **hardware engineering** and testing for new systems deployment.  
Developed **statistical analysis** models to monitor field performance of advanced navigation systems.  
Administered the corporation's **OSHA** compliance and training program.

Here are some examples of keywords to help you get started:

### **All Engineering**

Operating systems – Windows, Mac OS, LINUX, Solaris, UNIX, DOS  
Software - MATLAB, AutoCAD, Adobe Photoshop, Lotus 1-2-3, Mathematica, MS Office, Access, Excel

### **Aerospace Engineering**

Avionics, Satellite Navigation Systems, Aerodynamics, Stability and Control, Vibrations, Rotorcraft Systems, Fixed-Wing Aircraft Design, Experimental Aeromechanics, Propulsion Systems, Structural Design, Flight Dynamics, LabView, Pro/Engineer, Catia, Digital Datcom

### **Biological Resources Engineering/Bioengineering**

Biomaterials, Polymers, Vascular Dynamics, Water Control, Irrigation, Bioengineering, Wildlife Management, Water Quality, Biomedical Instrumentation, Physiology, Ecosystem Biology, Biotechnology, Thermodynamics, Transport Processes, LabView, CAD/CAM

### **Chemical and Biomolecular Engineering**

Chemical Process Thermodynamics, Nanotechnology, Bio-nanotechnology, Polymers, Tissue Engineering, Biochemical Engineering, Biomolecular Engineering, Petrochemical, Transport Processes, Manufacturing, Process Control, Plant-wide Process Control

### **Civil Engineering**

Fluid Mechanics, Structural Design/Analysis, Project Management, Engineering Materials, Environmental Science, AutoCAD, MATLAB

### **Computer Engineering**

Databases, GUI, VLSI systems, C, C++, Fortran, Java, Basic, Assembler, Pascal, Perl, HTML, XML, Javascript, CSS, DHTML, PHP, ASP, SQL, MS Visual, PSPICE, ColdFusion

### **Electrical Engineering**

Communications and Signal Processing, Electrophysics, Microelectronics, Controls, PSPICE, Cadence

### **Fire Protection Engineering**

Fire Alarm and Special Hazards Design, Fire Assessment Methods, Fire Protection Hazard Analysis, Structural Fire Protection, Fire Modeling, Sprinkler Design, Suppression Systems, Burning Processes, Ignition & Flame Spread, Smoke and Carbon Monoxide Transport, Computational Fluid Dynamics (CFD)

### **Mechanical Engineering**

Hydraulic Systems, Statics, Controls, Computer Aided Design, Stress Analysis, Finite Element Analysis, Thermodynamics, Robotics, Vibrations and Acoustics, Pro/Engineer, Catia, Nastran, SolidWorks

### **Reliability Engineering**

Software Reliability Analysis, Software Quality Assurance, Capability Maturity Model, Bayesian Probability Theory, TestMaster, WinRunner, SAS

## KNOW YOUR TRANSFERABLE SKILLS:

It may seem daunting to market yourself when you don't have a lot of "real world" work experience yet. However, your other life experiences can prove to be relevant, having provided you with a number of skills that could be considered applicable and valuable to the workplace. The chart below provides some examples of transferable skills that you may have gained from various experiences and accomplishments in your life. You may want to emphasize these characteristics and skills in your resume. In addition, highlight these kinds of characteristics in your cover letters, where your goal should be to make clear connections between your previous experiences and the desired qualifications in the job description for which you are applying (see our Cover Letter Handout for more information on writing cover letters).

<b>ACCOMPLISHMENT</b>	<b>POSSIBLE CHARACTERISTICS AND/OR SKILLS GAINED</b>
Academics/Honors/Awards/GPA	Hard-worker, motivated, competent, intelligent, confident, determined, self-reliant, time management skills
Financing Education/Supporting Self	Responsible, dedicated, balance
Work Experience	Dedication/longevity, interest, motivation, responsibility, customer service, interpersonal skills, teamwork
Projects	Practical application, patience, leadership, coordination/organization, creativity
Sports	Leadership, teamwork/contributor, disciplined, balance (know how to handle multiple responsibilities), endurance, commitment
Church/Community Work & Extra-Curricular Activities (Volunteer Work)	Well-rounded, leadership, talent, teaching ability, initiative, perseverance, a "go-getter," planning skills, self-confident
Family Responsibilities	Strong values, balance, responsibility, commitment, management skills

## TURNING RESPONSIBILITIES INTO ACCOMPLISHMENTS

Example: Responsible for writing a report.

**Who?** *Who did the work – one individual, two people, or a team?*

Independently wrote a report.

**What?** *What was the subject matter?*

Independently wrote a report on embedded systems.

**Why?** *What was the purpose of your work?*

Independently wrote a report on embedded systems to update senior engineers on latest developments in the field.

**How?** *How did you do this work?*

Researched latest developments in embedded systems using technical journals, the Internet, and interviews with engineers.

**When?** *Did you have to work within a certain timeframe?*

Completed report one week ahead of schedule.

**How much?** *Can you quantify your work?*

Independently researched and wrote a 20-page report on embedded systems.

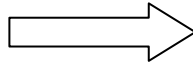
**What happened?** *What happened to your work after you completed it?*

Conducted one-hour oral presentation of findings for senior engineers and managers.

**Big picture?** *Did your work have an overall impact on the organization?*

Report persuaded management to begin using new technology that increased efficiency 15% during the first six months of its implementation.

## RESPONSIBILITIES



## ACCOMPLISHMENTS

By asking yourself the questions on the previous page, you can expand your descriptions and turn your responsibilities into accomplishment statements.

### EXAMPLE 1

#### Before:

**XYZ Company**, Germantown, MD

Summer 2004

*Student Researcher*

- Duties included research, report-writing and presentations.

#### After:

**XYZ Company**, Germantown, MD

Summer 2004

*Student Researcher*

- Independently wrote a 20-page report on embedded systems to update senior engineers on latest developments in the field.
- Researched latest developments in embedded systems using technical journals, the Internet, and interviews with engineers.
- Conducted one-hour oral presentation of findings for senior engineers and managers.
- Report persuaded management to begin using new technology which increased efficiency 15% during the first 6 months of its implementation.

### EXAMPLE 2

#### Before:

**Home Depot**, College Park, MD

June 2003 - present

*Department Representative*

- Responsible for helping customers, stocking shelves, and ordering materials.

#### After:

**Home Depot**, College Park, MD

June 2003 - present

*Department Representative*

- Provided customer assistance and professional advice on home improvement projects.
- Received increased responsibilities including managing multiple departments, training new employees, and preparing inventory orders.
- Participated in extensive training in areas of customer service and management.
- Collaborated with management staff to help make decisions about store policy and staff hiring.

## ACTION WORD LIST

### Supervise

Administered  
Controlled  
Coordinated  
Delegated  
Demonstrated  
Directed  
Governed  
Guided  
Headed  
Led  
Managed  
Monitored  
Orchestrated  
Oversaw  
Presided  
Programmed  
Scheduled

### Assist

Accompanied  
Collaborated with  
Dealt with  
Expedited  
Guided  
Helped  
Notified  
Performed  
Served  
Supported

### Decision

Activated  
Approved  
Chose  
Decided  
Determined  
Enlisted  
Hired  
Ordered  
Recruited  
Resolved  
Selected  
Specified

### Show

Conducted  
Demonstrated  
Exhibited  
Illustrated  
Performed  
Proved  
Represented

### Change

Adapted  
Adjusted  
Applied  
Cut  
Eliminated  
Implemented  
Improved  
Increased  
Innovated  
Installed  
Introduced  
Modified  
Proposed  
Reconfigured  
Reconciled  
Reduced  
Remodeled  
Reorganized  
Repaired  
Restored  
Revamped  
Revised  
Stimulated  
Transformed

### Influence

Advised  
Convinced  
Counseled  
Dispatched  
Educated  
Encouraged  
Guided  
Indoctrinated  
Innovated  
Motivated  
Negotiated  
Orchestrated  
Persuaded  
Promoted  
Recommended  
Referred  
Stimulated  
Suggested  
Supported

### Research/Technical

Analyzed  
Assembled  
Assessed  
Built  
Calculated  
Catalogued  
Charted  
Collected  
Compared  
Compiled  
Computed  
Constructed  
Defined  
Diagnosed  
Edited  
Engaged  
Estimated  
Evaluated  
Examined  
Extrapolated  
Forecasted  
Gathered  
Identified  
Implemented  
Indexed  
Inspected  
Investigated  
Isolated  
Maintained  
Measured  
Observed  
Organized  
Perceived  
Pinpointed  
Planned  
Prepared  
Projected  
Recorded  
Researched  
Reviewed  
Screened  
Solved  
Surveyed  
Synthesized  
Tested  
Traced  
Updated

### Communicate

Advertised  
Broadcasted  
Consulted  
Contracted  
Explained  
Expressed  
Informed  
Interacted with  
Interpreted  
Interviewed  
Instructed  
Lectured  
Marketed  
Met with  
Negotiated  
Publicized  
Published  
Presented  
Referred  
Related  
Taught  
Trained  
Transmitted

### Efficiency

Accelerated  
Applied  
Expanded  
Expedited  
Facilitated  
Improved  
Integrated  
Maintained  
Reinforced  
Reduced  
Streamlined

### Achieve

Attained  
Completed  
Effected  
Enlarged  
Exceeded  
Mastered  
Participated in  
Produced  
Provided  
Succeeded  
Won

### Office Activities

Billed  
Budgeted  
Completed  
Distributed  
Documented  
Filed  
Kept  
Handled  
Illustrated  
Obtained  
Operated  
Packed  
Processed  
Produced  
Purchased  
Ran  
Received  
Saved  
Sold  
Shipped  
Typed

### Create

Arranged  
Composed  
Conceived  
Conceptualized  
Designed  
Developed  
Devised  
Drafted  
Established  
Fabricated  
Formulated  
Founded  
Generated  
Implemented  
Initiated  
Invented  
Launched  
Made  
Opened  
Originated  
Produced  
Set up  
Structured  
Wrote

# Samantha L. Walker

400 Winchester Street, Apt.10B  
College Park, MD 20742

301-555-3434  
student@umd.edu

## Electrical Engineering Co-op/Internship Computer Systems • Microelectronics • Power Systems

### Education

**Bachelor of Science, Electrical Engineering**, Expected May 2009  
University of Maryland, College Park, MD  
GPA: 3.18

#### Highlights of Relevant Coursework:

Circuit Theory	Digital Logic Design	Microprocessors
Electromagnetic Theory	Digital Electronics	Computer Organization
Signal System Theory	Neural Networks	Digital Computer Design

### Honors

Dean's List – Fall 2004 to the present  
University of Maryland Engineering Award – 2004

### Computer Skills

**Programming Languages:** C, C++, JAVA, HTML, MATLAB, LISP  
**Applications:** MS Office, Access, Excel, PSPICE, SPICE, Cadence, AutoCAD, Mathematica, Pro Engineer  
**Operating Systems:** Windows 95/98/2000/NT/XP, UNIX, LINUX, MacOS

### Experience

**Computer Lab Assistant**, January 2007 – May 2008  
Computer Science Center, University of Maryland, College Park, MD  
Assist IBM PC users and answer questions related to word processing, spreadsheet, database, and desktop publishing programs.

**Student Grader**, September 2005 – December 2006  
Physics Department, University of Maryland, College Park, MD  
Evaluated student assignments for approximately 60 students taking Physics 1. Recorded and reported scores weekly. Maintained weekly office hours.

### Activities

**Secretary**, September 2005 – present  
Society of Women Engineers (SWE), University of Maryland, College Park, MD  
Coordinate new member recruitment and orientation. Technical Liaison for Fall 2004 SWE Job Fair. Contacted and recruited 12 industry representatives to attend Fair.

**Volunteer**, Summers 2005 and 2006  
Habitat for Humanity, College Park, MD  
Assisted with light construction and painting of five houses in Prince George's County. Organized celebratory picnic lunch for volunteers at end of each project.

# MICHAEL WU

5609 29th Avenue • Hyattsville, MD 20782 • (301) 559-8870 • student@umd.edu • US Citizen

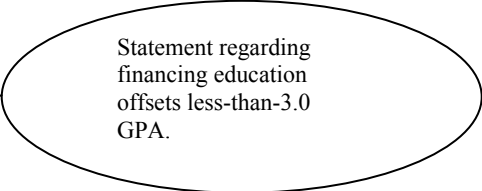
---

## OBJECTIVE

To secure a cooperative education or summer position in civil engineering focusing on project management.

## EDUCATION

**University of Maryland**, College Park, MD  
*B.S. in Civil Engineering*, May 2010  
GPA: 2.8  
Financing 100% of educational expenses



Statement regarding  
financing education  
offsets less-than-3.0  
GPA.

## HONORS

Hyattsville Rotary Club Award - 2006, Eagle Scout - 2004

## SPECIAL SKILLS

Computer Languages: C++, Java, and HTML  
Software: Microsoft Word, Quattro Pro, Mathematica, and Matlab  
Proficient in Spanish

## RELATED EXPERIENCE

**Human-Powered Water Pump Project**, University of Maryland, College Park, MD  
*Project Team Member*, August 2006 – December 2006

- Designed, built, tested, and modified a water pump powered by human effort.
- Collaborated with 6 students to meet project timeline and budget requirements.
- Prepared preliminary design specifications package and final technical report using Auto Sketch, Quattro Pro, and MS Word.

## OTHER EXPERIENCE

**Dining Services**, University of Maryland, College Park, MD  
*Service Staff*, August 2006 to present

- Served food, cleaned and maintained dining hall eating areas.
- Trained six new student employees.
- Participated in management training program.
- Worked 20 hours a week while taking a full load of courses.

## ACTIVITIES

**Alpha Chi Sigma Fraternity** - Rush Chair, 2006 to present

- Coordinated Fall 2006 pledge recruitment and training.
- Directed others in pledge procedures and trained successor.
- Developed pledge recruitment handbook which was adopted by the Interfraternity Council.

**American Society of Civil Engineers** – Member, 2006 to present

# Brad A. Kang

student@umd.edu

**Local address:** 4123 Hagerstown Hall • College Park, MD 20742 • (301) 314-5464

**Permanent address:** 3829 Belvoir Court • Newtown, PA 18940 • (215) 537-4177

## OBJECTIVE

---

To obtain a co-op, summer, or part-time position in biomedical engineering or biotechnology.

## EDUCATION

---

**University of Maryland** College Park, MD  
*B.S., Biological Resources Engineering* December 2009  
GPA 3.6

**Virginia Polytechnic Institute & State University** Blacksburg, VA  
*30 Credits, Chemical Engineering* May 2006  
GPA: 3.2

## EXPERIENCE

---

**Engineering Co-op & Career Services Office** College Park, MD  
*Peer Assistant* June 2008 - present

- Critique engineering student resumes.
- Provide information to engineering employers.
- Present introductory job skill workshops and orientation sessions.
- Maintain office databases and employer information files.

**University of Maryland** College Park, MD  
*Design Team Leader, Introduction to Engineering Design* Spring 2008

- Managed a team of 5 students to work within project constraints and deadlines.
- Designed, fabricated, and evaluated a digital postal scale according to design specifications.
- Submitted prototype chosen to compete in the final design competition.
- Prepared and formally presented a preliminary and final design package using Pro Engineer, Adobe Photoshop, Microsoft Excel, and Microsoft PowerPoint.

**The O. Hommel Company (OHCO)** Carnegie, PA  
*Chemist/Lab Technician* May 2006 - January 2007

- Formulated new and improved existing epoxy printing inks used for protecting, coating, or decorating glass surfaces.
- Conducted tolerance experiments on OHCO products for resistance to ultraviolet degradation, solubility, melting and freezing points.
- Independently filled product orders of up to 50 pounds and coordinated shipping itinerary.
- Continued work during academic calendar breaks.

## COMPUTER SKILLS

---

- Engineering Applications: AutoCAD-R13, Pro Engineer, TKSolver
- Language: C++
- Applications: Mathematica 5, Microsoft Office, MiniTab 11, Web Browsers
- Platforms: Windows 98/NT/2000/XP, Linux

## ACTIVITIES

---

- Society of Plastics Engineers: Student Member 2005 - 2006 academic year
- Virginia Tech Varsity Rowing Team: Spring 2005 & 2006

# Jane Lanier

123 Terrapin Trace, College Park, MD 20742  
301.555.5000 • student@umd.edu

---

## Entry-Level Civil Engineer

---

### Core Competencies

- Project Management** Demonstrated ability to manage people and resources to produce quality results on time and within budget constraints.
- Engineering Design** First-hand experience applying engineering principals to develop practical, cost-effective solutions to real-world design problems.
- Communication** Strong oral and written communication skills honed through collaboration with diverse constituencies including local government officials, community groups, construction material suppliers, and peers.
- 

### Education

**Bachelor of Science, Civil Engineering**, December 2008  
University of Maryland, College Park, MD  
Major GPA: 3.2                      Cumulative GPA: 2.8

#### Relevant Coursework

Structural Analysis	Fluid Mechanics	Engineering Materials
Geometrics and GIS	Geotechnical Engineering	Engineering Project Management

### Experience

#### **Engineers Without Borders**, Uduzhapa, Ecuador

*Ecuador Project Leader*, June 2007 - Present

- Collaborated with local government and community groups to design and implement a sanitation system serving a village of 40 households.
- Collected and analyzed soil and water data.
- Coordinated a team of eighteen volunteers during the four-week construction phase.
- Successfully installed 39 household latrines, significantly improving public health conditions.

#### **U.S. Department of Energy 2005 Solar Decathlon**, University of Maryland Team, College Park, MD

*Construction Group Member*, January – October 2006

- Worked with a student-led team of engineering and architecture students to design and build an 800 square foot solar house.
- Networked with company representatives at the 2006 International Builder's Show to obtain over \$50,000 in donations of free and reduced-cost building materials.
- Constructed forms and poured concrete foundation footings.
- Performed friction testing on footings to analyze lateral load capacity; conducted compression testing on sample concrete cylinders to determine breaking strengths.
- Awards: People's Choice Award; 8<sup>th</sup> place in overall competition

#### **Bridge Anti-Icing Project**, Introduction to Engineering Design, University of Maryland, College Park, MD

*Project Team Member*, August 2005 – December 2005

- Designed, built, and tested a functional prototype of an autonomous bridge de-icing system.

### Skills

**Software:** AutoCAD, MicroStation, MATLAB, ArcGIS, Microsoft Office

**Languages:** Proficient in Spanish

### Memberships and Activities

**American Society of Civil Engineers (ASCE)**, Secretary (Fall 2007 – Spring 2008)

**Society of Women Engineers (SWE)**, Active Member (Spring 2005 – Present)

# JONATHAN B. SMITH

Top Secret Clearance

701 Eastern Dr. College Park, MD 20740 ▪ (301) 405-1234 ▪ student@umd.edu

## OBJECTIVE

Seeking a full-time mechanical engineering position within the Washington Metropolitan area that would utilize knowledge of the defense industry.

## EDUCATION

**A. James Clark School of Engineering, University of Maryland**

College Park, MD

B.S., *MECHANICAL ENGINEERING (Honors Program)*, GPA: 3.8

Expected May 2009

### QUALITY ENHANCEMENT SYSTEMS AND TEAMS PROGRAM (QUEST)

- Innovative interdisciplinary quality management program that focuses on customer value management, process and product design, problem solving, project management customer satisfaction, and teamwork.
- Worked with a company to establish a manufacturing process for a new product.
- Utilized several Six Sigma and Lean strategies.

### AWARDS

Banneker/Key Scholarship Award, 2005 - 2009

A. James Clark School of Engineering Leadership Award, 2008

Black Engineering Society New Member of the Year, 2007

### HONOR SOCIETIES

Omicron Delta Kappa National Leadership Honor Society, Tau Beta Pi Engineering Honor Society,

Pi Tau Sigma Mechanical Engineering Honor Society

## COMPUTER SKILLS

Microsoft Office, Matlab, Catia, Pro/Engineer, HotMetal Pro, System Architect, DOORS

## EXPERIENCE

**Lockheed Martin**

Crystal City, VA

*MISSILE DEFENSE SYSTEM ENGINEERING TEAM*

Summer 2007, Summer 2008

- Assisted in the Development of the Master Integration Plan to support for integration of the many components involved in the Missile Defense Test Bed.
- Created a Microsoft Access Database to allow for the input and store information on missile defense component health and status.
- Supported the development of the Planning Allocation Matrix to track the capabilities of the Missile Defense Test Bed based on software implementation.
- Developed a process map to document how tasks were completed in the Documentation Team so that problems in the process could be identified and improved.

**University of Maryland**

College Park, MD

*RESIDENT ASSISTANT*

September 2007 - Present

- Supervised and advised 80 students to maintain a healthy community climate.
- Sponsored wellness, diversity, and social programs for the Ellicott Hall Community.

**Columbia Association**

Clarksville, MD

*COMPUTER INSTRUCTOR*

May 2006 - August 2006

- Instructed over 100 middle school aged children on website design and video editing.
- Formulated a curriculum and schedule for the summer camp.

## ACTIVITIES

**Engineering Student Council, University of Maryland**

College Park, MD

*PRESIDENT*

June 2007 - Present

- Lead the executive board, plan meetings and programs, and act as a liaison to other engineering societies and the School of Engineering.

*ENGINEERS WEEK CHAIR*

June 2006 - February 2007

- Coordinated events for Engineers Week with the Alumni Association and the different student groups.

*FALL BALL COMMITTEE CHAIR*

June 2006 - November 2006

- Supervised a committee to plan the Engineering Fall Ball dance.

**Academic Advisor Search Committee, University of Maryland**

College Park, MD

*COMMITTEE MEMBER*

November 2007

- Helped evaluate resumes, created interview questions, and conducted interviews to select finalist for the academic advisor position in the Engineering Undergraduate Advising Office at the University of Maryland.

# Justin Barrow

534 Glebe Rd • Fairfax, VA • 20121 • J.Barr85@yahoo.com • (703) 555-2623

**Objective** To obtain full-time employment in spacecraft system design or testing.

**Education** **University of Maryland** College Park, MD  
*B.S., Aerospace Engineering, Astronautics* Expected May 2008

**Related Coursework**

Aerodynamics	Control of Aerospace Systems	Space Propulsion & Power
Aerospace Analysis & Computation	Mechanics of Materials	Space Systems Design
Aerospace Electronics & Instrumentation	Space Flight Dynamics	Thermodynamics
Aerospace Structures	Space Navigation & Guidance	Vibration and Aeroelasticity

**Professional Experience** **Orbital Sciences Corporation** Greenbelt, MD  
*Intern, Technical Services Division* January 2008–Present

- Support the Hubble Space Telescope (HST) project as a safety engineering intern.
- Perform thermal analyses on various HST support systems (i.e. equipment carriers) and compiled a technical report of the results.

**University of Maryland Space Systems Laboratory** College Park, MD  
*Research Assistant, Maryland Advanced Research / Simulation Suit* June 2004–January 2008

- Researched and developed various stages for soft good (load bearing structures made completely from fabric) and electronic systems: including design, prototyping, construction, testing, and evaluation.
- Engineered an upper torso made entirely of soft goods, as well, as designed and patterned various other soft good systems. Also developed a prototype set of boots and gloves for use during neutral bouncy simulation of micro gravity.
- Designed and assembled a communications headset for use by the wearer of the suit.
- Programmed a graphical user interface for a head-mounted display system that allowed the user of the suit to monitor their conditions in real time.

**Analytical Graphics, Inc.** Exton, PA  
*Test Intern, Development Department* May 2007–August 2007

- Provided support on development efforts of the Satellite Tool Kit (STK) software package.
- Performed quality assurance tests on newly developed features of STK and reported the results to the development team.
- Developed Perl scripts that significantly reduced employee time commitment for testing and validating HTML code integrated into the STK package.

**ILC Dover, L.P.** Frederica, DE  
*Engineering Intern, Space Inflatables Department* June 2006–August 2006

- Provided support to production line, the research and testing of new materials, and the creation and prototype of new components for NASA's Extravehicular Mobility Unit (EMU) suits and the ILC's EVA suit, and the I-Suit.
- Assisted in the design of an electronic, GPS guided, support pack ("info pack") for the I-suit, as well, as designed and digitally patterned several new pieces of the EMU's protective thermo micro-meteor garment (TMG).

**FlightSafety International** Moonachie, NJ  
*Intern, Simulator Maintenance* September 2003–May 2004

- Performed operations quality assurance testing on a Dassault Falcon 50 simulator (Level C) and compiled a report on the findings for the FAA's annual inspection.

**Relevant Skills**

**Operating Systems:** Linux, Macintosh, Windows  
**Programming:** C/C++ (familiarity), HTML, MATLAB, Perl (familiarity)  
**Software:** 3DStudio Max, Adobe PhotoShop, AutoDesk AutoCAD, AutoDesk Inventor, AutoDesk Mechanical Desktop, Microsoft Office, Pro/Engineer  
**Other:** Electronic Design and Assembly, Machining, Prototyping, Sewing

---

## Education

<b>Ph.D. in Electrical and Computer Engineering, Communication</b> University of Maryland, College Park, MD	GPA: 3.91/4.0	Expected: 5/2010
<b>M.S. in Electrical Engineering, Control Systems</b> Sharif University of Technology, Tehran, Iran	GPA: 3.81/4.0	9/2002
<b>B.S. in Electrical Engineering</b> Sharif University of Technology, Tehran, Iran	GPA: 3.78/4.0	5/2000

---

## Computer Skills

**Platforms:** Unix, Linux, DOS, Windows XP/2000/NT, and VAX/VMS

**Languages:** C/C++, Java, MATLAB, Verilog, Assembly and C for Texas Instruments DSP processors, Assembly and C for embedded systems and Intel x86 Assembly

**Software:** Network Simulator (**NS2**) GloMoSim, CPLEX, and Qualnet

---

## Experience

**Graduate Research Assistant**, University of Maryland, ECE Department, College Park, MD 8/2004 - Present

- Conducted research on dynamical behavior of TCP traffic in IP networks, and developed **award winning** CDMA Aggregate Perturbation (**CAP**) technology as a defense solution for Distributed Denial of Service (DDoS) attacks in the Internet (*C/C++*, *MATLAB*, *TCL* and *NS2* code).
- Investigated Quality of Service (QoS), Routing, and Topology Control in wireless networks. Initiated a new methodology to formulate data flow in the wireless networks as an electrostatic field propagation problem (*C/C++*, *MATLAB*, *Qualnet*, code, and simulation of 802.1x standards).
- Developed system architecture, *Dataflow/RTL*, and *gate level* realization of a pipelined DDoS detection and prevention cell for high speed links in IP networks on a *Xilinx Virtex-II Pro FPGA* chip. Supervised the design group and served as the team leader. (*C/C++* and *Verilog* code).
- Led the design team of a library of signal processing blocks in Verilog. Designed and implemented *Dataflow/RTL* and *gate level* realization DSP blocks including FIR and IIR filters.
- Implemented both the transmitter and receiver of a V22bis modem according to the ITU-T recommendations based on the Texas Instruments TMS320C30 DSPs (*C* and *TI Assembly Code*).

**Control System Designer**, MKK Control Systems (founder), Tehran, Iran 8/2002 - 8/2004

- Designed front-end of an embedded system of an autonomous process controller. This control system is currently being mass produced, and it has been installed in more than 100 plants.

**Control System Design Chief Engineer**, Fan-Niroo Company, Tehran, Iran 8/2003 - 8/2004

- Designed and implemented a control, emergency shutdown and process visualization system. The project included extensive hardware design of digital and analog control boards and implementation of control algorithms, and programming in C/C++ and X86 Assembly.

**Graduate Teaching Assistant**, Sharif University of Technology, Tehran, Iran 9/2000 - 6/2002

- Assisted in teaching of senior level electrical engineering courses, including Signals and Systems, Control System Design, Digital Control and Modern Control.

---

## Awards and Leadership

- **First Place Award of Business Plan Competition**, University of Maryland, 2007. Won the first place award for **MacroPhage Networks** (With Prof. M. Shayman and Dr. M. Alasti).
- **Received \$50,000 University Technology Development Fund (UTDF)**, Maryland Technology Development Corporation (TEDCO), 12/2007. (With Prof. M. Shayman).
- **President**, University of Maryland Electrical and Computer Engineering Graduate Student Association (ECEGSA), 2007 -2008.

- **Dean's Honored Graduate**, Sharif University of Technology, Tehran, Iran, 6/2000. Selected as the most outstanding graduating Electrical Engineer in 1999-2000 academic year.

---

## US Patent and Invention Disclosure

- **Method for Quantifying Responsiveness of Flow Aggregates to Packet Drops in A Communication Network** (US pending patent number 20040233846).
- **Using Direct Sequence Spread Spectrum to Determine Responsiveness of a TCP Aggregate to Packet Drops**, reported to the Office of Technology Commercialization, University of Maryland, 4/2003, Ref. No. IS-2003-026.

---

## Publications

M. Shayman, R. Gahremanpour, R. Skoog, N. Jasinski and M. Lanti, "Network Management and Control Mechanisms to Prevent Maliciously Induced Network Stability," Proc. 8th IEEE/IFIP Network Operations and Management Symposium (NOMS-2006).

M. Lanti, K. Gallichio, and M. Shayman, "Mitigation of Denial of Service Attacks in the Internet," Proc. 41st IEEE Conference on Decision and Control (CDC-2005).

M. Lanti and M. Shayman, "Routing in Wireless Ad Hoc Networks by Analogy to Electrostatic Theory," Proc. IEEE International Communications Conference (ICC-04).

To see a complete list of publications visit <http://www.mlantifakewebsite.com>.

---

## Research Proposals /Grants

**"Routing and Topology Design of Hierarchical Sensor Networks"** With Prof. Mark Shayman, ECE Department of the University of Maryland, Submitted to NSF Sensornet program 1/2008.

**"CDMA-Based Mitigation of Distributed Denial of Service Attacks"** With Prof. Mark Shayman, ECE Department of the University of Maryland, Submitted to NSF NetS program 4/2008.

---

## Professional Activities/Affiliations

- Paper Reviewer, INFOCOM 2008
- Paper Reviewer, International Conference on Communication (ICC) 2007 and 2008
- Member, Scientific Research Society (Sigma Xi)
- Student Member, IEEE

---

## Graduate Courses

**University of Maryland:** Random Processes in Communications and Control, Multi-User Communication, Wireless Communication, Advanced Discrete Signal Processing, Communication Design Lab, Stochastic Optimization and Control, Digital Communications, Detection and Estimation Theory, Digital Computer Design, CAD of Digital Systems, Mixed Signal VLSI Design, Advanced Digital System Design

**Sharif University of Technology:** Switching Systems, Information Theory, Data Communication Networks, Object Oriented Programming, Neural Networks, Fuzzy Systems and Sets, Adaptive Control, Multi Variable Control, Optimal Control, Robust Control, Robotic Manipulators, Applied Industrial Control, Modern Control, Nonlinear and Digital Control, Discrete Signal Processing, Operation Research, Abstract Algebra, Math Analysis, Linear Algebra

---

## Additional Information

**In The Media:** "UM Business Plan Competition Could Launch Next Google," 5/3/2008. Received favorable comments about MacroPhage Networks and the CAP technology. Covered by PR Newswire, CBS MarketWatch, NBC, Baltimore Business Journal, Yahoo Finance, DallasNews, Canada Finance, National Hispanic Corporate Council, and The Gazette.

# ONLINE RESUMES

An increasing number of employers require all job candidates to complete an online application at the employer's website. Online applications allow employers to efficiently advertise positions, accept applications, and track candidates through the application and hiring process. While online applications can feel like a "black hole," they are often the best way to get your resume in the right hands, if you put in the time and effort to do them well.

Online applications may include a resume builder that allows you to enter information about your education, work experience, and skills into specific fields, or you may be asked to upload a resume or copy and paste the text of your resume into a text box.

## ONLINE RESUME FORMAT

The primary difference between a standard resume and an online resume is the format. Special formatting does not translate well when pasted into an electronic application.

For that reason, avoid the following formatting in online resumes:

- Bold, italicized, or underlined text
- Bullets or special symbols
- Tabs
- Horizontal and vertical lines
- Tables
- Columns

Look carefully through each online resume you submit; make sure that it is as legible and reader-friendly as it can be. Don't forget that your electronic resume will be read by a human being!

### DO

University of Maryland  
College Park, MD  
B.S., Civil Engineering  
Expected May 2011  
GPA: 3.1

### DON'T

University of Maryland      College  
Park, MD                       B.S., Civil  
Engineering                       ExpectedMay  
2011                       GPA: 3.1

---

---

## ADDITIONAL TIPS FOR ONLINE APPLICATIONS

- **Incorporate keywords.** Hiring managers will often use a keyword search to find qualified candidates in their database. Read the job description carefully, noting key words and phrases, and incorporate those into your resume.
- **Use spell check.** If the online application does not have a spell check feature, paste your text into another document to make sure that you have not overlooked any typos.
- **Follow up.** If you have met a recruiter at a career fair or information session, contact them by email or phone to express your interest and let them know you have completed the online application. Employer contact information is also available in eLink.

# REFERENCES

Although not all employers will ask for references, it is a good idea to have a typed list of references available during your interview. Then if you are asked for references, you will appear prepared. If you are not asked about references directly, you may want to offer them at the end of your interview.

References may include people such as former supervisors, professors, teaching assistants, or advisors. Try to choose people who can talk about your skills and abilities. Speak with the people you'd like to use as references and ask them if they can provide a reference for you if necessary. This way you can ensure that your references know to expect calls, and you can provide them with any details about your background and job search that may assist them in providing a good reference for you. It is a good idea to provide your references with an up-to-date copy of your resume.

## Sample Reference Sheet

**JANE DOE**  
1234 Campus Drive • City, State Zip • Phone Number

**References**

Mr. David Steel  
Supervisor  
Chevy Chase Bank  
1341 Cherry Hill Road  
College Park, MD 20742  
(301) 555-0123  
dsteel@ccbank.com

Dr. Ellen Setcher  
Advisor  
Department of Civil Engineering  
University of Maryland  
1143 Glenn L. Martin Hall  
College Park, MD 20742  
(301) 405-1234  
esetcher@umd.edu

Dr. Arthur Strauss  
Assistant Professor  
Department of Civil Engineering  
University of Maryland  
1156 Glenn L. Martin Hall  
College Park, MD 20742  
(301) 405-4321  
astrauss@umd.edu

Former supervisors, even if not in an engineering job, are good choices for references.

Consider asking an advisor or professor you know well to serve as a reference for you.