PhD Non-Academic Careers and Job Search

Jamika Burge, Capital One
Sujata Banerjee, VMware Research
About Jamika...
jamikaburge.com  |  @jdburge
More about Jamika...
jamikaburge.com | @jdburge
Where Jamika Works

Capital One (COF)
- Established in 1994
- HQ in McLean, VA
- Acquired Adaptive Path in 2014

One Design
- Team of 450+ designers
- Collaborate with Product, Tech Divisions
- Products: Mobile Wallet, CreditWise, Eno
Jamika's advice

- Take some time to think about your personal and professional philosophies. Allow that to be an important part of your decision-making.
- It's OK to explore new opportunities. Having several good career opportunities – especially in tech – is the #newnormal.
- No one can do what you can do, the way you do it. Never feel that you cannot move to a new opportunity if you don't feel like a valued contributor.
- Be open to trying something new, especially if it challenges you.
Sujata Banerjee

VMware Research
Senior Staff Researcher
Research co-Director, External Research and Emerging Technologies

Prior Career

• Hewlett-Packard Labs
  Distinguished Technologist and Director, Networking Systems Research Group
• University of Pittsburgh
  Associate Professor, Telecommunications Program

Education

• Ph.D., University of Southern California (USC)
• B.Tech. and M.Tech.: Indian Institute of Technology (IIT), Bombay

My Research

Programmable Networks, Software Defined Networking (SDN)
Network Functions Virtualization (NFV), Energy Efficient Networking, Measurement
Where Sujata works: VMware

Founded in 1998 - 21 years old
Commercialized x86 virtualization
Fortune’s Best 100 Places to work in 2018

VMware Products and Solutions Areas
- Software Defined Datacenter
  Hybrid cloud
  Server, network, storage virtualization & management
  Security
- Desktop virtualization
- Telco/NFV
- Mobility management, Edge/IoT

VMware Research
Focus on technology disruptions
Both internal research and external research partnerships
Example areas: blockchain, programmable data plane, distributed consistency, reprogrammable hardware, remote memory, big data
Advice from Sujata

Evaluate what you really enjoy doing to define your role
- Research vs Building products vs Management
- Design vs implementation; Tangible vs open ended problems

Work on hard and soft skills
- Learn to network: Go to conferences, meet-ups, present your work well
- Learn to “sell” your ideas

Need Depth and Breadth to succeed
- Inter-disciplinary work often has big returns
- You may need to work in large diverse teams for big impact

Be ready for change
- Watch for technology trends
- Be ready to learn and “re-invent” yourself
- Don’t stay in a role that you don’t enjoy
Let’s jump right in!
What is a YOUR Dream Job?

Figure out:

• Where to live?
• What kind of work?
• What direction and how much to grow?

Industry/Government/Research Lab jobs come in many flavors

• Research
• Engineering
• Development
• Design
• Management
• Consulting
• Start-up
Poll: Have you done an internship?

YES?

NO?

Try before you buy - Get an internship!
The Engineering Ladder
Titles may vary across companies

- New PhD Grad
- New BS Grad
- Engineer 3
- Engineer 4
- 5. Senior Engineer
- 6. Staff Engineer
- 7. Senior Staff Engineer
- 8. Principal Engineer
- 9. Fellow

Up or Out within 3 Years
Applying for Jobs

• Less regulated schedule than academia
• Your network will matter
• Increase your visibility
  ✓ Volunteer at local events and conferences
  ✓ Go to talks by people from industry (and academia) visiting your school. Meet with them.
  ✓ Give polished presentations at conferences
  ✓ Target networking opportunities at conferences
  ✓ Stay in touch with school alumni
  ✓ *Do you have a LinkedIn profile?*
• Attend bigger events: GHC, career fairs, CRA-W grad cohort
• Apply to positions on employers website and follow up!
Things to consider

• There is a ton of variability in industry jobs
• Sometimes people don’t understand the value of the Ph.D.
• If you are trying to get an engineering job make sure your coding skills are visible in CV and up-to-date (e.g., on github)
• You have learned to deal with ambiguity and find solutions. This is valuable.
Phone Interview

• It’s a pre-screen
• Do your homework
  ✓ Lookup the person who contacted you for screen
  ✓ Lookup the group/team
  ✓ Read the open position (open req) closely for details that you might have missed
• Mock/practice phone interviews
  ✓ Have a short technical pitch on your thesis ready
  ✓ Opportunity to ask your questions – technical focus of the group, work environment, etc.
On-Site Interview

Logistics

• Give yourself plenty of time to get there, fly in the night/day before
• Show up on time (or early)
• Dress professionally
• Be confident and enthusiastic about your work

Make sure you understand format

• Talk? Whiteboard interviews? Meetings?
• Ask for the list of people ahead of time, research them
• Ask for breaks if you need them, take a breath in restroom, carry a snack
• Lunch/dinner are interviews, stay professional
Interview (2)

- If there is a talk (same as academic)
  - Rehearse, rehearse, rehearse
  - Have polished slides: call out important points, use visual material, dig deep technically
  - Be professional when answering questions but don’t let them de-rail you
- Don’t be offended if they didn’t have time to read cv/papers closely or attend talk
- Ask questions: your chance to figure out if you want to work there
- Is this a place you can see yourself?
Offers

• Congratulations!
• **Negotiate** whatever you care about
  - ✓ Start date
  - ✓ Salary (even if outside your comfort zone)
  - ✓ Signing bonus
  - ✓ Stock options
  - ✓ Moving package
  - ✓ Campus and flexibility
  - ✓ Presenting work at conferences
  - ✓ Consider all *strong* offers
Backup Questions

- Do internships matter?
- How do I showcase my technical skills?
- Can I publish papers? Contribute to open source projects? Work with students?
- How do I find and get on projects?
- How are projects started?
- What is the interview process like?
- How important is teamwork versus individual work?
- How are my work goals set?
- What is the career path of a researcher in your organization?
- Is it possible to switch during your career: Industry/Academia/National Laboratory/Funding Agency/Non-Profit?
Thank you!
## Comparisons: Industry, Academia, Government

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<thead>
<tr>
<th>Academia</th>
<th>Industry (other than Research)</th>
<th>National Lab or Industrial Research</th>
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<tbody>
<tr>
<td>Active publishing in top tier conferences</td>
<td>Must build “real” systems</td>
<td>Mix of building “real” systems and publishing</td>
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<tr>
<td>Active collaborations with academia</td>
<td>Up-to-date technical skills</td>
<td>Active collaborations with labs and academia</td>
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<tr>
<td>Establish visibility in research community</td>
<td>Understand business roadmaps</td>
<td>Address agency or company mission critical problems</td>
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<tr>
<td>“Soft” money</td>
<td>“Hard” money</td>
<td>“Soft” and “hard” money</td>
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