PhD Non-Academic Career Paths & Job Search

Alan Bivens, IBM
Joel Branch, BOSS AI
About Alan

What I do for fun:
• 2 little guys (10 and 12)
• Volleyball league
• Travel
• Collaborative board games
• Numismatist

Education:
B.S. Computer Science
University of Alabama
Ph.D. Computer Science
Rensselaer Polytechnic Institute

Career:
• IBM Research - 14 years
• IBM Blockchain - 3 years
• IBM Public Cloud - 2.5 years

Current Role:
• Director Data and Platform Services, Master Inventor
  IBM Public Cloud

Work Activities:
• Drive external offerings
• Lead geographically dispersed teams
• Invention / Research
• Corporate Diversity Initiatives
About Joel

Education:
- B.S., Computer Science, Howard U.
- Ph.D., Computer Science, RPI

Career:
- IBM Research
- ESPN Innovation Lab
- BOSS AI (enterprise AI startup)

Current Role:
- Chief Product Officer
- Borough Councilmember, Metuchen NJ

More detail:
- I’ve benefitted from working in different types of tech orgs; large enterprise, entertainment-oriented, startup

What I do for fun:
- Make people laugh
- Cook (BQQ, baking)
- Arts (photography, design)
- Travel/adventure
- Gaming
What Non-Academic Careers Exist for PhDs?

• First of all: you are not a failure as a PhD if you don’t get (or don’t even want) an academic job! Far from it!

• There are plenty of great non-academic career paths where PhDs can be successful:
  
  — Industrial labs
  
  — Government labs
  
  — Product development
  
  — Startups / Entrepreneurship
  
  — Outside the tech industry: finance, health, public sector, non-profits

• Even flexibility to move back and forth
What Is Industrial Research All About?

• Can get the best of industry resources and academic research both at the same time!

• Industrial research jobs lie on a spectrum
  – Sometimes look one year ahead of product development, sometimes many years ahead!
  – Fundamental research, or applied

• Many ways to innovate!
  – Writing papers
  – Filing patents
  – Product development
  – Collaboration with other companies, academia, etc.
  – Societal impact
A Few Words on Publishing

• There are many opportunities to publish when in non-academic PhD jobs
  • Many industry research roles will consider it part of your job (included in your evaluations, etc.)
  • Many summer intern projects result in publications
  • Academic and government lab collaborations will frequently result in publications
• Some jobs may not emphasize publishing
  • May instead focus on protecting “secret sauce” or impressive demos

• There are likely processes to follow
  • Protect the intellectual property in the paper by first filing a patent
  • Focus areas and focus venues
  • In some cases, super sensitive areas will have temporary restrictions to preserve first-mover advantage.
Finding a Non-Academic Job as a PhD

• Build your professional network (conferences, workshops, visiting speakers at your school, etc.)
• Establish a good online presence
• Pay attention to industry focus areas
• Create a concise c.v. and a professional website
• Consider your preferences to help guide your search.
  ─ Recall there are many different jobs. What kind would help you reach your career and personal goals?
  ─ Also realize it is possible to change jobs over time. You are not making a decision for life.
Internships

• Recommended for multiple reasons.
• Many internships lead to offers for permanent jobs.
• Teach a lot about specific positions at specific employers, also about more general job types, employer types, and industries. Help refine your preferences and goals.
• Provide opportunities for longer-term career networking.
• When doing one, try to reach out beyond your immediate project and mentor, both to learn and to network.
Interviews

• Don’t underestimate them, but don’t be scared either
• Widely different kinds (e.g., research vs. development)
• Ask about format in advance (e.g., talk vs. no talk, mix of coding vs. design questions, whiteboard vs. computer)
• Find sample questions online and/or in books (Cracking the Coding Interview is a good one!)
• Practice answering questions in expected format
• Ask for clarification if question is vague
• Talk through your thinking while arriving at a solution
• Ask questions to help figure out if you want to work there
Offers & Negotiations

• Congratulations! Don’t be afraid to negotiate. It’s an important part of the process. A few hours of discomfort can make an enormous difference.
• This is your chance to set terms
• Try not to give the opening bid
• It’s good to have competing offers
• Negotiate $$$ if you have a concrete alternative, or can demonstrate why they need to meet your number
• Take time to understand offer / bonuses
• Negotiate on perks if they cannot match $$$
Having a Successful Non-Academic Career

• Think of yourself as your own mini-startup
  — Do good work, market yourself, avoid bad press

• Find your work-life balance

• Success in academia is about papers and grants

• Success in industry is about making the company $$$
  — ...but what that actually means differs for each job
  — ...and that still leaves plenty of room for personal and professional growth along the way

• Every job is different; study the success of others and seek out mentors to help you adjust to your particular situation
Questions for Discussion
(shamelessly borrowed from previous presenters)

- 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?