The Job Search

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Finding a Job

• General
  • Know what you want
  • Your application
  • Preparing your talk
  • Preparing for the interview
  • The big day!
  • After the interview

• Academia

• Government

• Industry
What are you looking for?

• What kind(s) of position are you looking for?

• What type of environment do you want to work in?
  • Small or big department? Join an established research group or start one?

• Where are you (and any significant other) willing to live?
Your Application

• Cover Letter

• Curriculum Vitae (CV)
  • Degrees, research and teaching experience, jobs held, honors and awards, papers published, professional service, ...

• Research Statement (2-3 pages)
  • What is your vision for your future research?

• Teaching Statement (only academic,1-2 pages)
  • What is your vision? What do you want to teach?

• Letters of recommendation (3-5 people)
Identifying Letter Writers

• Letters are very important
• With your advisor, choose people who are
  • Familiar with your research
  • Respected in the academic community
  • Expected to write a meaningful and positive letter

• Consider (in addition to advisor)
  • Members of your research community
  • Internship advisors
  • Members of your thesis committee
  • Other professors at your institution

• Give letter writers a copy of your application material
Preparing Your Job Talk

• Provide enough background so people outside your area of research can follow
• Identify a challenging problem with impact and identify your specific contributions
• Show you understand any weaknesses/limitations of your approach and/or your results
• Thank your collaborators
• Include future research ideas and interests
Tips

• Get input from your advisor
• Give practice talks to a wider audience at your institution
• Consider any feedback you get.
• Get the audience to ask questions, even weird ones, and to play “difficult” personalities.
• Video your talk and (gulp!) watch it.
• Practice until you are comfortable but not bored.
• Have a backup copy of your talk.
The Selection Process

• Expect to use an application website
• Some departments/labs ask for letters for all applicants, others only for the selected ones
  • Letters are typically uploaded
• Some departments will let you know that there is a “no match,” but often you will not hear anything
• Government lab hiring is notoriously slow
• Few applicants will be invited for an interview
  • Telephone interviews are becoming more common (very common for teaching institutions and labs)
Preparing for an Interview

• Do your homework – understand the organization!
  • Know the research areas and accomplishments of the people you will meet; prepare questions for them.

• Find answers to
  • What are the strengths (and weaknesses) of the organization/institution/group/department?
  • How might your research capabilities complement and integrate with the organization/department?
  • What role does the group/department play in the institutional structure?
  • Why are you interested?
The Big Day(s)

• Don’t set up a crazy travel schedule
• Get plenty of sleep, eat healthily, and wear comfortable clothes
• Enjoy and have fun
• Try to imagine yourself in the environment
  • Do you like the organization/environment?
  • Do you want these people as your colleagues potentially forever?
• Remember: you are interviewing them too!
Tips

• Be enthusiastic! Show passion about something.
• Interpersonal skills are important.
  • Do they want you as their colleague?
  • Don't say negative things about other institutions or people. It can come back to haunt you.
• Always tell the truth
• Remember you are representing your advisor, your department, your university.
• Consider when or whether to mention any two-body challenges.
After the Interview

• Evaluate how it went – revise your materials if necessary
• Talk to your advisor
• Follow up with anything you said you would do
• File for travel reimbursements promptly
  • Read the instructions carefully and keep copies of receipts
• Send notes thanking people you particularly enjoyed talking to
• Okay to contact the chair/lead if you have an another offer
ACADEMIC POSITIONS
Where to apply?

- Identify
  - “stretch,” “eye-level,” and “safety” departments
  - departments having openings in your area
- Check ads: CRA, CACM, IEEE Computer, departmental websites
- Certain research areas can match the hiring goals for more than one department (e.g., CS, ECE, I)
- Don’t apply somewhere you are 100% sure you won’t go. Certainly do not visit.
- Keep an open mind! You might be surprised what you end up liking the best.
- Academic non-teaching due dates: November, December
Typical Academic Interview

• ~2 days
• The interview talk (preferably early, not at the end)
• 30-minute one-on-ones
• Meet with department head/chair (and dean)
• Meet with a small group of grad students
• Meals

Goal: Convince them that you will add strength to their department in important areas (research, teaching and service) and will be a collegial department citizen
Questions You Will be Asked

• *What is your vision for the field?*
• What was the novel insight and/or long-lasting scientific contribution of your thesis work?
• What do you want to work on next and why? What would you write in a proposal?
• How do you choose problems to work on?
• Why you are interested in this institution?
• What courses would you like to teach and why?
• What is your philosophy about teaching students?
• Do you have questions for me?
Questions You Should Ask

• What’s the best thing about the department?
• How are departmental decisions made?
• Are faculty encouraged to collaborate with each other?
• Graduate students
  • How good are the graduate students? What jobs do they take?
  • How are they supported?
• How is interdisciplinary research viewed?
• How is collaborative research viewed?
• What is the teaching load? How are teaching assignments made?
• How will I be evaluated? What is the tenure process?
• Do junior faculty have a mentor? Chosen how?
Negotiating the Offer

• Start date
• Teaching load and 1st year teaching assignment
  • For your first year, ask to teach an advanced grad course, or to co-teach an undergrad course
• Research start-up package
  • Grad student support, travel funds, summer salary, equipment, lab and student space
  • committee reduction, teaching-load reduction
• Tenure clock issues (clock credit, clock stoppage)
• Salary
• Subsidized housing, moving expenses
• Campus parking, child care facilities/cost
• Help with obtaining an H1-B visa (if you’re non-US)
What is Often Not Said

- Most faculty get tenure
  - Most departments hire expecting/hoping to award the person tenure
  - Hiring and mentoring of junior faculty is expensive, in time and money
- Academic research positions provide the most flexibility in terms of future options
  - Often difficult to move from a teaching position to an industrial position
  - Often difficult to move from a teaching or industrial position to a faculty position
Post Doc Positions

Taking a post-doc position is becoming more common in CS (standard in other fields)

Funding opportunities exist

- NSF, ONR, …
- Industry and government labs
- Well funded research groups (often no official ads)
- Some number have citizenship requirements
2-BODY OPPORTUNITIES: WHEN TO TELL?

In the cover letter
- Useful only if it involves two academic positions
- If it involves a different department, it allows the departments to explore options early

After invited for an interview
- They have already decided they are interested in you
- Make it clear what you will accept

During the visit
- Can discuss your needs and the options
- Can be distracting to the interview (consider only discussing with head/chair)

When an offer is made
- There may not be enough time
Related Links

- J. Wing’s “Tips on the Interview Process”
- Appropriate and Inappropriate Interview Questions;
  http://www.purdue.edu/oie/Search_Screen/FacultySearchScreenManual.pdf (Page 34)
- CRA’s Taulbee Survey
  http://cra.org/resources/taulbee/
GOVERNMENT/NATIONAL LAB POSITIONS
Government Lab Environment

• Projects tend to be collaborative, multi-disciplinary and often large in scale
• Working on science problems of national priorities (national security problems at many labs)
• Opportunities to get involved in pure research and applied research problems
• Work on problems that require new research solutions
• Advise graduate students through university affiliation and internships
• Opportunities to collaborate with academia and industry
Government Lab Research

- Mix of soft money and block funding (depends on the lab)
- Research projects need to fit with the priorities and interests of the agency
- National facilities/resources (leading edge capabilities)
- Encouraged to publish research papers (unless classified research)
Additional Notes

• Typically looking for long-term employees (even when a term-position is advertised)
• Postdoc salaries pre-defined so no negotiation
• Joint appointments with university possible
• Some positions have a citizenship requirement
• Ask about evaluation criteria and management structure (different at each lab)
INDUSTRY POSITIONS
Why Consider Industry?

• You want to see the impact of your work in the *real world* on *real users* with *real data*

• You want to expand your skill set and gain exposure to a wide range of technical challenges

• You want flexibility in choosing your geographical location—industry provides greater options

• You like working with diverse multi-disciplinary experts (EE, CpE, CS, etc...) in a multi-geo environment

• Opportunity to collaborate with varied stakeholders (govt., academia, industry)

• Leadership opportunities—own a project or own a functional area of a larger project

• Career development and growth opportunities — targeted development programs for growth
Industrial Research Lab

- Often considered innovation engine of the company
- Research aligned to corporate objectives with a strong focus on strategic visioning/innovating for the future (5-10 yrs out)
- Focused on product roadmap impact as well as knowing where the puck is going for the business
- Innovation not just invention
- Usually 3 phased approach to innovation - Research, Prototype (proof of concept), Transfer - seamless pipeline to market
- Opportunity to collaborate across the Labs, company, external partners (industry, academia, govt.) on your project
- Personal accomplishment - see the impact of your work on real users
Industrial Research Lab

- Ability to build acumen in adjacent research areas outside of your primary area of interest
- Experience the full life cycle of development from research to product
- Publish papers/file patents
- Personal accomplishment- see the impact of your work on real users
- Risk Taking is valued
- Failing Fast, Fail Forward- “Better a $1M failure in the Lab than a $1B failure in the Fab”
- Diversity of talent and expertise
Industry Job Search

- Attend industry events and professional conferences (SWE, CRA-W, Grace Hopper) to meet company reps, hiring managers
- Present at conferences to build your network
- Leverage the connections that your professors have with companies you are interested in
- Create a profile on the websites of companies that you are interested in
- Identify a work environment that is aligned to your values, goals, work style
- Research the company and try to set up informational 1x1’s with folks in the group that you have interest in
- Network, Network, Network!
Preparing for an Interview

• Be able to speak to how your research is applicable to the company
• Be able to articulate your research in three parts:
  • challenge, results, impact
• Don’t assume everyone you are talking to has a PhD.
  • make it plain and simple
• Speak to your leadership abilities across a variety of scenarios always conveying outcomes/results/impact
• Share examples of collaboration for results
• Don’t apply if you have an aversion to coding: to many, it’s considered an art, and should not be dismissed!
  • Akin to applying for an academic job and stating that you don’t like to write papers or give talks.
Industry Research: Interview

• Similar to academic/government lab search
  • one day of 1:1 interviews + a job talk
• The match between your research and the company’s objectives should be fairly obvious
• Having a personal contact with a researcher in the lab is invaluable:
  • Will let you know about new ventures or proposals to which your research applies
  • Will invite the right people to your talk
• Demo of your results is a plus
  • evidence that your ideas work!
INDUSTRY POSITIONS
(not in Research Labs)
Industry: Software Engineering

- Emphasis on making things work
  - Simple may be better than clever
- Challenges often involve complex interacting software built across groups
  - Lots of interaction
- Many project choices and frequent movement between projects.
- sequential short-term projects vs. parallel long-term projects:
  - both possible and both can work
  - Choose wisely (get help from mentors!)
Industry: Software Engineering Concerns

Will my expertise go stale?

Will I just be a developer?

Am I leaving research behind?

If I change my mind, can I work at research lab or academia?
Industry (Research and non-Research) Offer / Compensation

Title
Base Salary
  • Expect to share info about competing offers
  • Salary growth probable once on board
Additional Compensation
  • Stock options and units
  • Retirement plans and matching funds
  • Incentive bonuses
  • Medical insurance
  • Other perks
Ask questions!
Get wise regarding negotiation