Private Sector Jobs for Economics PhDs

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Who am I?

- Yale Econ Alumnus (graduated 2018)
  - Empirical IO and Econometrics
- Experience:
  - Senior Associate at Charles River Associates (2018-2020)
    - Antitrust and competition economist
  - Research economist at Spotify (Nov 2020 – present)
    - Build econometric models of listener demand
      - Inform content valuation efforts
      - Improve music recommendation algorithms
- Served on hiring committees at both CRA and Spotify

Why consider the private sector?

- Solve practical business problems
  - See the immediate impact of your work

- Collaborative working environment
  - With few exceptions, will always be working as part of a team in some capacity

- Financial Compensation and Flexible Locational Preferences
  - Make a comfortable living (six figures to start)
    - H1B Database (good for salaries)
    - Levels (base + equity)
  - Faster salary ladder than government and most academic posts

- What about job security?
  "We are all constantly measured in the eyes of our employers by what we actually deliver, and those who can find a way to succeed even in the face of adversity will always have an advantage over those who cannot, or do not want to."

  https://madned.substack.com/p/an-old-hackers-tips-on-staying-employed

What kind of private sector jobs are there?

- Economics Consulting*
  - Antitrust
  - Litigation

- Examples of consulting shops
  - Charles River Associates
  - Compass Lexecon
  - Cornerstone
  - NERA

- Technology Firms
  - Economics
  - Data Scientists

- Examples of how economics is used at tech firms
  - Zillow
  - Amazon
  - Uber Causal Inference
  - Netflix

Economists (and Economics) in Tech Companies

*Distinct from management consulting/policy consulting

Economics Consulting versus tech

- In <u>consulting</u>, the goal is to become an equity partner
  - Business development is key
- Clients are lawyers
  - Work is high stakes and adversarial
- Intense work hours
  - Lumpy and difficult to forecast
- Financials
  - Bonus tied to [Billable Hours](#)
- Career Stability
  - Up or out
  - Crash of 08
  - Rainmaker retires
- Skill Development
  - Street Fighting Economics
  - Language of business and policy
  - Project management skills
  - Communication skills and deliverables

- In <u>tech</u>, career path is less defined
  - Individual Contributor versus Manager
  - Measured by your business impact
- Clients are internal to the company
  - Consult on business strategy
- Work life balance
  - Perks
- Financials
  - Stock options and company equity
- Career Stability
  - [Silicon Valley Layoffs](#)
  - Relatively less mature than traditional industries
- Skill Development
  - Cutting edge technology
    - Online experimentation and platform design
  - Interfacing with non-economists (MBAs and non-technical folks)
  - Political skills

What is the private sector looking for?

1) Excellent verbal and written communication skills
    1) Can you clearly communicate ideas to non-technical audiences?
    2) How *practical* are your recommendations? (business sense and product sense)

2) Problem solving skills
    1) Majority of interesting business questions are *causal* in nature
    2) Economics toolkit is well suited for answering these questions
        1) Marginal Benefit versus Marginal Costs
        2) Trade Offs and Equilibrium Effects
        3) Causal Inference - experimentation

3) Facility working with *large* datasets
    1) Basic programming skills are a must (python/SQL)
    2) Theorists are at a disadvantage

What's the recruiting process like?

- **Consulting**
  - Most shops recruit at the AEA

- Application Process
  - Apply on the JOE website
  - First Round Interview at the AEAs
  - Second Round Flyout
    - Present your job market paper
  - Receive decision
- Heavy weight on letters and JMP
  1. Ask your letter writers to send letters tailored to industry
  2. Credible Signaling and cheap talk

- **Tech**
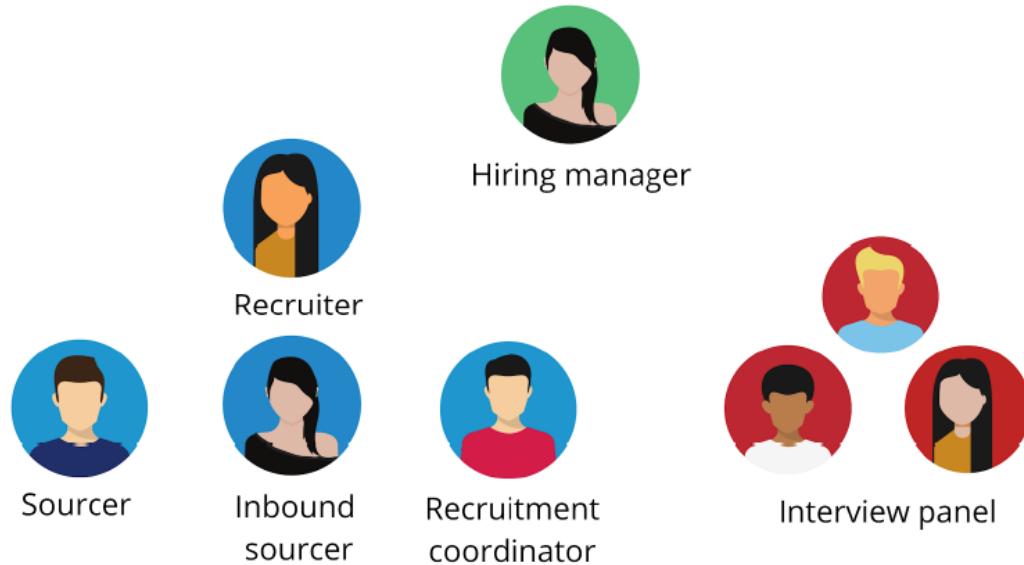 - NABE TEC (register now!)
  - LinkedIn

- Application Process
  - Send in your resume
  - HR Screen
  - Technical Screen
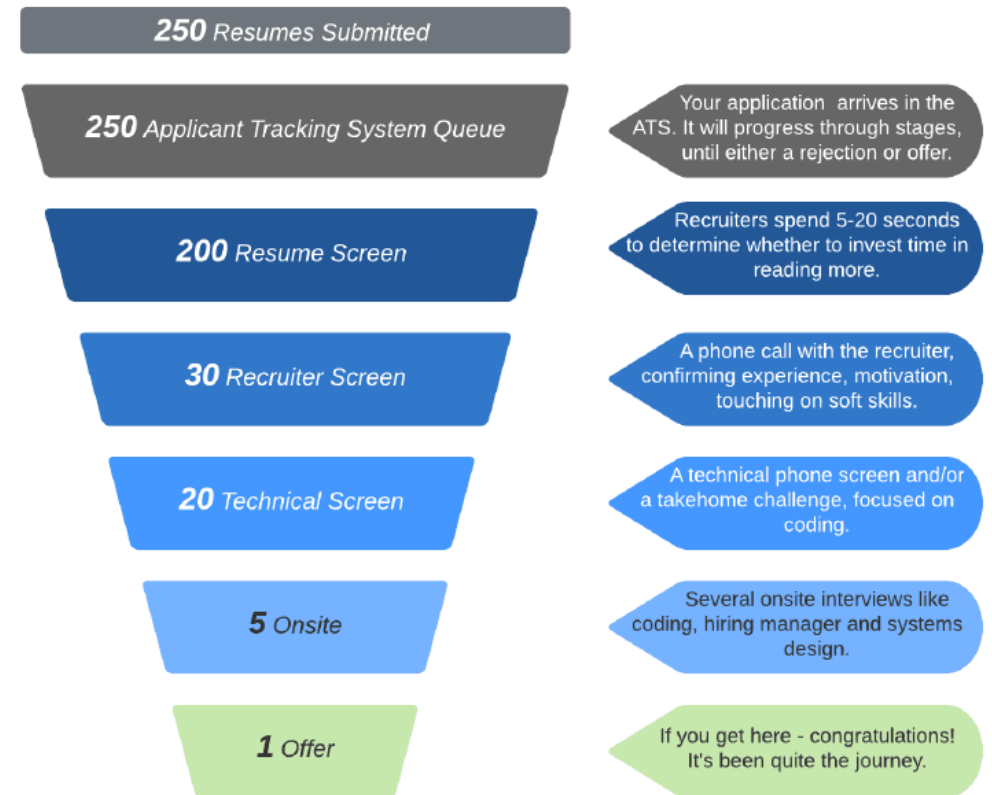 - On Site
    - Case studies
- Little weight on letters and JMP
  - Evan Buntrock's Tips for Technical Interviews
  - Amazon STAR Method
    - Situation – Task – Action - Result

Hiring Pipeline for Tech Roles (mileage varies)

Examples of recent Job Postings
Uber Applied Scientist
Instacart - Economist/ML Engineer

250	Resumes Submitted
250	Applicant Tracking System Queue	Your application arrives in the ATS. It will progress through stages, until either a rejection or offer.
200	Resume Screen	Recruiters spend 5-20 seconds to determine whether to invest time in reading more.
30	Recruiter Screen	A phone call with the recruiter, confirming experience, motivation, touching on soft skills.
20	Technical Screen	A technical phone screen and/or a takehome challenge, focused on coding.
5	Onsite	Several onsite interviews like coding, hiring manager and systems design.
1	Offer	If you get here - congratulations! It's been quite the journey.

A typical hiring pipeline at a large, well-known tech company. The actual process, and numbers will vary on a role-by-role, company-by-company basis.

Graphics are taken from The Tech Resume

How to get past the tech recruiter

- Referrals will help you get your foot in the door
  - Leverage your social networks
  - Alumni networks
    - Spotify ([Matthew Hom](#))
    - Amazon ([Max Perez](#))
    - Convoy ([Eduardo Fraga](#))
  - Cold calls

- Research the company before your HR screen
  - Think about the product from the multiple perspectives
  - Prepare elevator pitch about why you want to work at the company

Resume Advice

- Relevant experience (including internships)
    - Be specific about results, quantify impact ($s) and specify your _personal_ contribution. Eliminate jargon.

        - **Show**

            - Developed strategies to measure consumer substitution patterns in healthcare markets. Estimated equilibrium demand models that government agencies used to block harmful mergers and clients used to successfully navigate the merger review process

            - Worked with data engineers at multiple companies to build new data products from large transaction databases to inform business decisions (e.g. detect and respond to fraudulent chargebacks)

        - **Don't tell**

            - Designed and estimated Logit-based demand models for FTC and DOJ merger investigations in numerous markets including inpatient hospital services, health insurance, retail CPGs (e.g., ice cream), and cable television

            - Served as project manager on numerous Antitrust litigation cases involving complex econometrics in numerous markets including payment cards, pharmaceuticals, industrial materials, computer software.

- Relevant technical skills
    - Python and SQL are the bread and butter in tech (see [Scarlet Chen's Journey from Econ PhD to Tech](#) for recommended resources)

Resume Template

1) Real world experience (internships)

2) Education Details

3) Skills

4) Projects/Research

5) Other Section
   1) Leadership Experience
   2) Awards

6) Interests/Hobbies

Credit: The Tech Resume Inside Out

City, Country
resume@pragmaticengineer.com

Gergely Orosz

linkedin.com/in/gergelyorosz
github.com/gergelyorosz

I am a full-stack software engineer especially interested in building magical mobile experiences, scaling systems up, and shipping reliable applications. Note: use the summary when it makes sense.

Work Experience (include internships here)

Senior Software Engineer   Uber   Sep 2018–Present
Payments team   Amsterdam, Netherlands

- Results, impact and your contribution.
- Add numbers to the impact, use active languages and mention specifics like the languages used.
- The more recent the position, the more details you usually want to share.

Education and Certifications

- **M.Sc. Computer Science,** University of Munich, Germany.   2013–2014

Technologies and Languages

- Languages: Java, Go, Swift, Kotlin, {other languages}
- Technologies: MySQL, Postgres, AWS, Git, {other technologies}
- Other: Data structures and algorithms, {other relevant skills}

Projects

- **Projects** are worth mentioning when they are standout, and when they add to your resume. When you have strong and relevant work experience, they are less important. Describe the impact, the challenges and why the project stands out. Blogs and articles can also be projects.
- **Another project** - Modern API design principles and concepts with Nodejs. Concepts include Caching and Content Negotiation. See the source on Github.
- **Technical blogging** on The Pragmatic Engineer blog. Popular articles include a piece on Angular Material and one on Clean Code.

Other Sections

- The above sections should cover most resumes. However, if you have something unique, consider adding a section for it. Sections I have seen include:
- **Volunteer work** - though I would suggest merging it under **Projects and Volunteer Work** or **Extracurricular.**
- **Patents** - if you have them, do show them off!
- **Awards** - these are especially relevant when you have less work experience, or when the award is truly outstanding.
- **Certifications and Courses** - be mindful of where you are applying and how relevant these are. E.g. don't list a SEO course for a distributed systems engineering job. Also, projects show off skill far better than a course.

Interests

- Listing interests can be a conversation starter. Don't go overboard on this one though.
- I am an avid masters swimmer and I have read most science fiction novels worth reading.

Career Paths in Tech
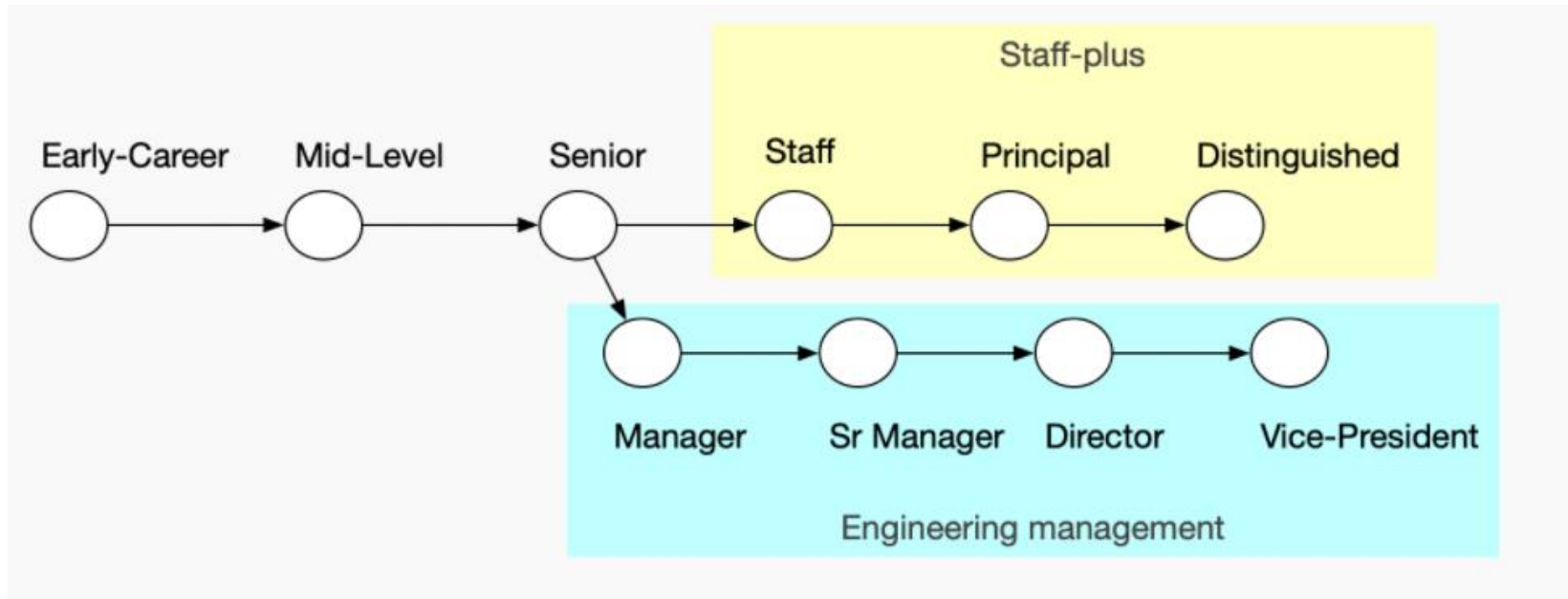
Source: Staff Engineer: Leadership beyond the management track

Resources

Other Economists perspective on the transition to Tech

- [Rose Tan's Journey from Econ PhD to Data Scientist](#)
- [Scarlet Chen's Journey from Econ PhD to Tech](#)

Advice on writing resumes

- [The Tech Resume Inside Out](#)
- [Pragmatic Engineer](#)

Career Advice

- [Unspoken Rules](#)