MS Career Opportunities and Job Search

Gonzalo Ramos, Microsoft Research
Jaime H. Moreno, IBM Research

(…and thanks to authors of similar presentations from previous workshops!)
Agenda

• Introductions

• Possible career paths with an MS degree

• Preparing for the job market

• Career growth and advancement

• Preparing for interviewing
Gonzalo Ramos – goramos@microsoft.com

From Argentina

Principal Researcher – Microsoft Research AI - Redmond

before that…

– Senior UX Scientist – Amazon Grand Challenges (2015-1016)
– Senior Design Technologist – Amazon Concept Lab (2013-2015)
– Scientist, Microsoft Live Labs; OSD (2007-2013)
– MS, Ph.D. in CS, University of Toronto, Canada
Jaime H Moreno – jhmoreno@us.ibm.com

• Originally from Chile
• Current role
  – Distinguished Researcher, Senior Manager, IBM TJ Watson Research Center, NY
  – Recent completed project: IBM Summit and Sierra supercomputers (#1, #2 in Top500)
  – Current focus: Cloud Infrastructure

• Previously (although long ago ..)
  – Faculty Member, University of Concepcion, Chile

• Computer Science, PhD, MS, UCLA
• Electrical Engineer, University of Concepcion, Chile
PRELIMINARIES
Who is in the audience?

• How many currently in Master Degree program?
  – Course or Thesis program?

• Who will be graduating this spring?
  – Do you already have plans for after graduation

(other than a well-deserved vacation..??)
Exercise: Turn And Talk To Your Neighbor

A. What is your plan after graduation?
   - E.g., look for job in what area/industry, enroll in Ph.D., …

B. What do you expect from your professional experience?

C. What do you want as your future career path?
   - E.g., Technical Leader? Individual Contributor? Astronaut…?
CAREER PATHS
Job Market, Opportunities and Tradeoffs

• Computing skills are in high demand
  – There are many job options with many tradeoffs

• Established large/mid-size organizations
  – Scale
  – Resources, roles, locations, career path
  – Potential drawback: Lost in the crowd

• Small organizations
  – Focus
  – Diverse and well-defined role

• Start-ups
  – Risk/reward/pace
  – Broad role

• Freelance
  – Autonomy
  – Diverse role

Position
• Software Engineer
• UX Designer
• Data Scientist
• Product Manager
• Product Evangelist
• Field Support
• PhD program

Industry
• Technology
• Healthcare
• Finance
• Telecommunications
• Automotive
• Retail
• Sports
• Entertainment

Employer
• Established company
• Startup company
• Research lab
• Government
• Self
A Note About Internships

• Provide opportunities for longer-term career networking
  – When doing one, try to reach out beyond to learn and network

• 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

• Many internships lead to offers for permanent jobs
**MS Educational Paths**

**MS Course-based**
- MS is practice of new knowledge

**MS Thesis Project**
- Team member in development project
- Industry, Business, Laboratory, Start-up, ...
- May also qualify for marketing, project management roles
  - Beneficial to take some business classes
- Thesis may help on more advanced development roles
- More attractive for a research lab position
  - Thesis should help with publications

**PhD Program**
- PhD is development of new knowledge
- At end of PhD, you are the expert in your dissertation topic area!
## MS Programs Comparison

<table>
<thead>
<tr>
<th></th>
<th>Course-based MS</th>
<th>Thesis MS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Educational Goals</strong></td>
<td>• Acquire knowledge via coursework and internships</td>
<td>• Acquire knowledge via coursework and internships</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Acquire project/research skills (thesis)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Get taste of research or advanced development</td>
</tr>
<tr>
<td><strong>Program</strong></td>
<td>• Courses deeper than undergraduate</td>
<td>• Courses deeper than undergraduate</td>
</tr>
<tr>
<td></td>
<td>• Become capable of technology and/or business development</td>
<td>• Become capable of technology and/or business development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Introduction to research or advanced development</td>
</tr>
</tbody>
</table>
### Professional Ladder

<table>
<thead>
<tr>
<th>Career Level</th>
<th>Contribution and Impact</th>
<th>Expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advisory Engineer</td>
<td>Team Member / Leader in a product/project</td>
<td>Advanced knowledge and development skills in one area of contribution</td>
</tr>
<tr>
<td>Senior Engineer</td>
<td>Leader in developing projects (research or technology)</td>
<td>Project-wise expert</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Proven technical capabilities</td>
</tr>
<tr>
<td>Distinguished Engineer</td>
<td>Leader in developing large successful projects (research or technology)</td>
<td>Technical authority, impacts a business</td>
</tr>
<tr>
<td>Fellow, Senior Fellow</td>
<td>Leader in developing successful product lines or technologies</td>
<td>Top technical leader in broad industry</td>
</tr>
<tr>
<td>Director of Productor Business Development</td>
<td>Develop new or drive existing business lines</td>
<td>Product or Business expert</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Impacts business lines</td>
</tr>
<tr>
<td>VP of Productor Business Development</td>
<td>Strategic direction for new or existing business lines</td>
<td>Product or Business expert</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Impacts broad business lines</td>
</tr>
<tr>
<td>CEO/CTO</td>
<td>Business or technical leader, strategic decision maker</td>
<td>Business and technical strategy, visionary</td>
</tr>
</tbody>
</table>
Career Impact

• Technology and product development
  • Contribute to company’s products, client engagement, open source
  • Contribute to intellectual property (patents)
  • Develop new products
  • Demonstrate strong problem-solving skills

• Research
  • Engage in scientific discovery, collaborate with peers
  • Develop creative thinking about technical solutions to problems
  • Publish work, engaged with academia

• Service
  • Departmental, Company-wide committees: hiring, engagement, promotion, mentoring, operational processes, …
  • Professional: conference committees, organizations
HOW DO YOU PREPARE FOR THE JOB MARKET?
Job Search Preparatory Homework

• Identify goals and gaps that may exist

• The Internet and LinkedIn are your friends
  – Have a portfolio / online presence
  – Build a Network
  – Contact recruiters

• Have concrete work examples you can talk about

• Put yourself out there
  – Workshops, meetups, events, career fairs, companies’ campus visits
Job Search Preparatory Homework

Craft Your Resume / CV

– Think who do you want to present yourself as
  • E.g., hacker, researcher, manager, designer
– It is OK to have different profiles
– **Be concise**
– **How are you going to stand out?**
– Ask for feedback
– LinkedIn can be you CV,
  • but have one nonetheless
HOW DO YOU GROW IN YOUR CAREER?
Career: Performing and Growing

You and Your Manager
• Know expectations and opportunities of your position
• Define clear goals and set expectations for performance
• Communicate your progress

Being Good
• Align with the objectives of the organization
• Understand how to leverage team, and vice-versa
• Balance between being nice and making a point

Growth Path
• Be visible to peers, your manager, your manager’s manager
• Actively participate in meetings (sit at the table, not in the back)
• Take on stretch assignments to grow visibility and capabilities
• Meet other people in the organization over lunch/coffee, job shadows
• Find or ask for a mentor (formal or informal)
• TAKE RISKS
Career: More About Growth

• You own your own career

• Be pro-active about your career plans
  – You can change your mind any time
  – The first job most likely will not be your only job

• Ask frequent, actionable feedback (manager, peers)

• Talk to people at the next level about what they do and what is expected

• Volunteer to take on roles above your current position

• Find advocates to build a case for promotion
Example: someone I know

- Female MS graduate in Computer Science
  - First joined database company as Software Engineer
  - Moved to research/advanced development in a large company
  - Established herself as technical leader in her group
  - Became manager/senior manager of a group
  - Transitioned to business organization
    - Product and services deployment, business development, strategy development
- Currently: Vice-President in the large company
Many successful executives have MS degrees

– Virginia "Ginni" Rometty, IBM CEO – BS in CE/EE
– Satya Nadella, Microsoft CEO – MS in CS, MBA
– Sundar Pichai, Google CEO – MS in Materials Science/Engineering, MBA
– Jeff Bezos, Amazon CEO – BS in EE/CS

Successful business and technical leaders also come from MS level
SPECIAL CONSIDERATIONS FOR PERSONS WITH DISABILITIES
Special Considerations for Persons with Disabilities

• America Disability Act (ADA)
  – Don’t assume all organizations comply with ADA.
    • There is no ADA enforcement.

• When to disclose disability?
  • At interview if physical (visible) disability,
  • At offer if invisible.

• Some organizations actively seek persons with disabilities for certain product development tasks.

• Advocate for what you need to be successful in your career growth.
HOW DO YOU PREPARE FOR INTERVIEWING?
Interviewing

• Widely different kinds

• Never turn down a reasonable opportunity to interview.

• Some companies have interview prep material online.
Preparing for Interviewing

• Prepare for the target position
  • Behavioral questions: explain what you did in a specific situation.
  • Know your stuff: make sure you fully understand questions, ask clarifications if needed.
  • Talk through your answers, show your thought process.
  • “Perfect is the enemy of done.”

• Rehearse interviews with your peers.

• If interviewers’ names are known, learn about them.

• If target area/project is known, learn about it.
  • Current status, history, alternatives.

• Show your interest for the position
  – Have goals / ambition.
You are the interviewer too!

• Be confident,

• Evaluate the organization as much as they are evaluating you,

• Gauge culture and climate through informal conversations,

• Can you see yourself working there?

• Can you talk with others that work there?

• Get information you may need to make a decision, if you get an offer,

• Think through timelines, be flexible,

• Have your list of questions.
The Job Offer

• Send follow-up/thank you notes.

• Stay in touch with recruiter!
  – But do not look anxious.

• Negotiate the job offer, if the opportunity arises.

• You can negotiate things other than salary.
  – Stock/ stock options grants, vacation time, job assignment.

• Know what you are worth.
  – Consider your experience, research online, talk to peers.

• Be clear on your willing to compromise.

• Use other job offers as leverage.
Offers and Negotiations

• This is your chance to set terms.

  >>> DO NOT TO GIVE THE OPENING BID <<<

• Demonstrate why potential employer should meet your number.

• Understand offer / bonuses.

• Starting compensation is not the ONLY deciding factor.
Job Search Resources

• Cracking the Tech Career by Gayle Laakmann McDowell

• Cracking the Coding Interview by Gayle Laakmann McDowell

• http://glassdoor.com

• (app) Blind

• LinkedIn

• SimplyHired.com

• … (we are not personally endorsing any product)