

Landing a Faculty Position (2016 ed.)

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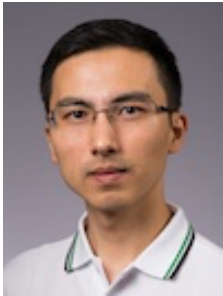
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RICE UNIVERSITY

Previous editions of this talk

- 2014: Chris Studer (Cornell)
- 2015: Kaushik Mitra (IIT-Madras) & Jacob Robinson (Rice)

Some of my favorite resources



- Philip Guo
 - Faculty Job reflections <http://www.pgbovine.net/guo-faculty-job-search.pdf>
 - The PhD Grind



- Matt Might
 - <http://matt.might.net/articles/advice-for-academic-job-hunt/>



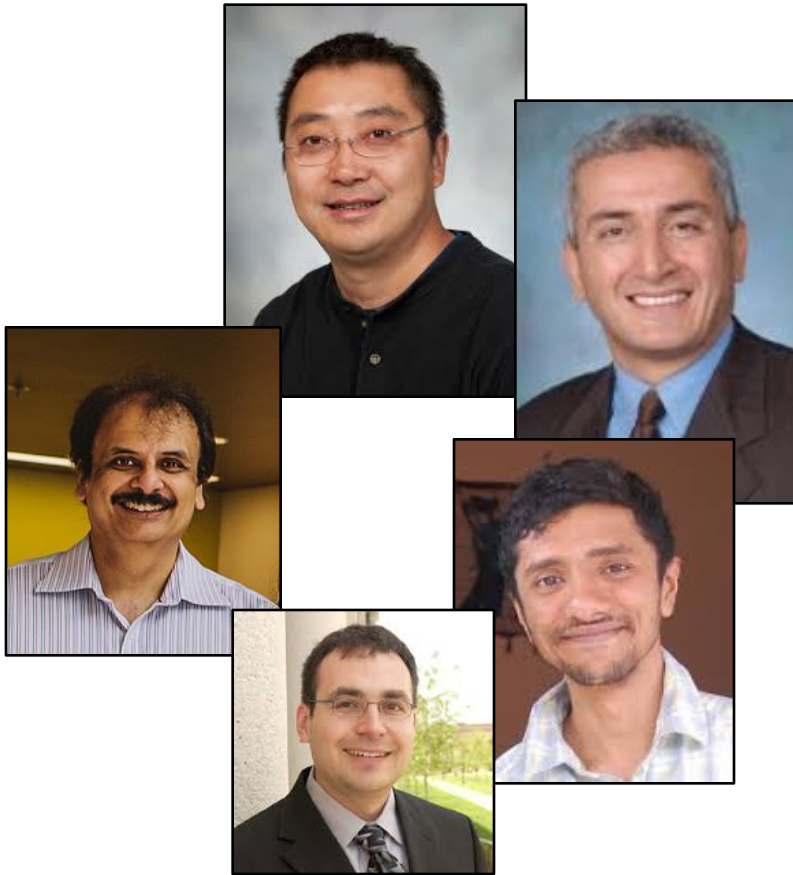
- Matt Welsh
 - <http://matt-welsh.blogspot.com/2012/12/how-to-get-faculty-job-part-1.html>
 - *“Dan Wallach at Rice recognized that I was probably getting sick of fancy restaurants and took me out to eat crawdads with my hands (and a big old plastic bib to protect my suit)”*

Disclaimer: Your Mileage May Vary



Consult your advisors for personal advice

Some of my favorite resources (cont.)



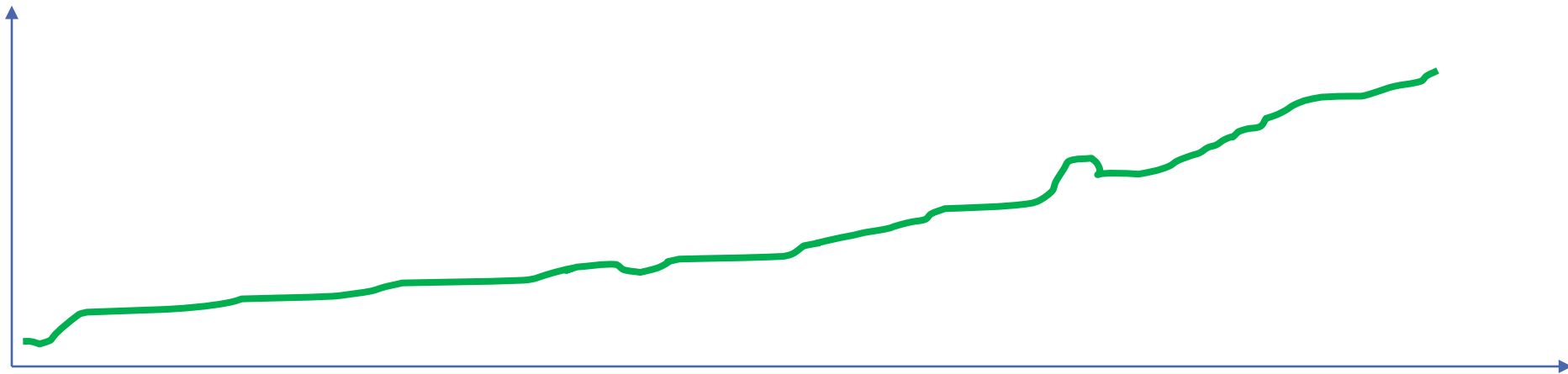
- Lin Zhong
- Victor Bahl (Microsoft Research)
- Behnaam Aazhang
- Ashok Veeraraghavan
- Dan Wallach

What is a faculty job?

- I don't know, ask your advisor!
- Lead a successful research lab
 - Train Ph.D. students to become successful researchers
 - Fundraise through national and industry grants
 - Build impactful/visionary research
- Teach undergraduate and graduate curriculum

What “they” want

~75% Research
~20% Teaching
~5% Miscellaneous





Moshe Y. Vardi

Rice University

Logic and Computation

Verified email at cs.rice.edu - [Homepage](#)

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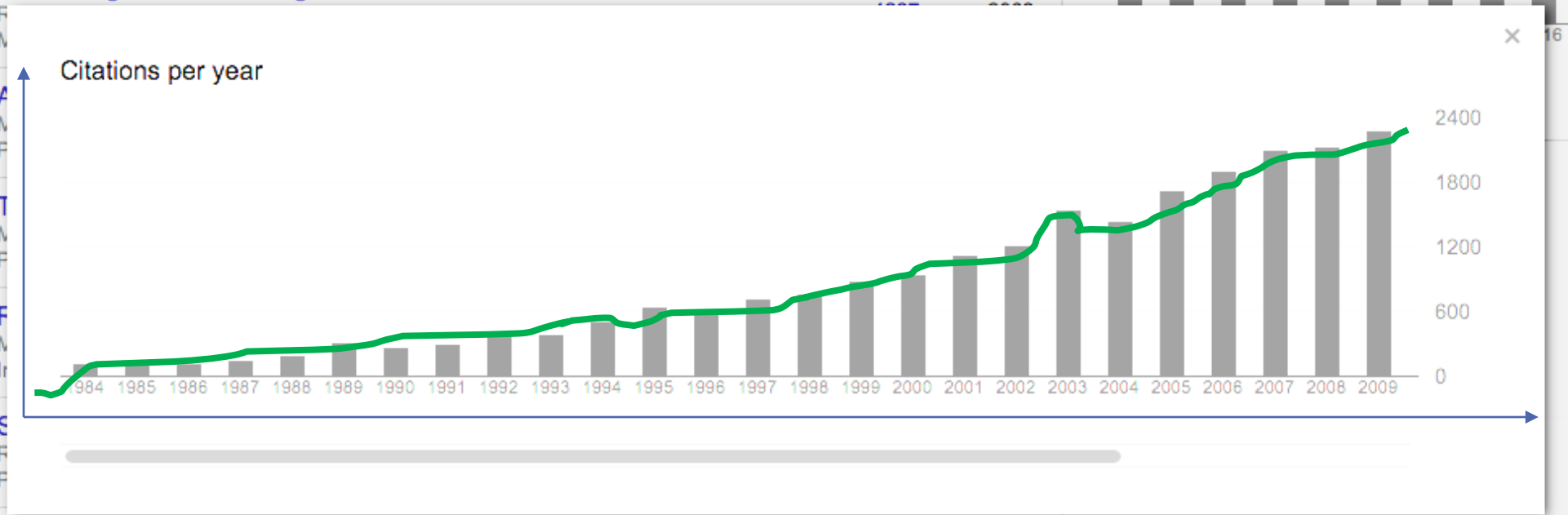
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Title 1-20

Cited by

Year

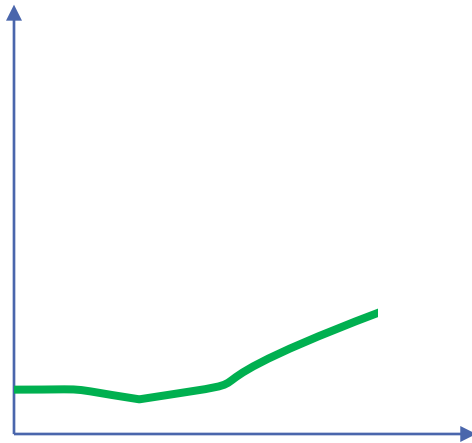
Reasoning about knowledge



The computational structure of monotone monadic SNP and

Nir Piterman

What “they” see



- Webpage
- Curriculum Vitae
- Google Scholar
- Professional network
- Research Statement
- Teaching Statement
- Reference Letters
- Job Talk
- One-on-one meetings

Timeline

PhD/Postdoc Career

- Webpage
- Curriculum Vitae
- Google Scholar
- Professional network

Application (Late Fall)

- Research Statement
- Teaching Statement
- Reference Letters

$$N_1 = 60$$

Interview (Spring)

- Job Talk
- One-on-one meetings

$$N_2 = 10$$

Negotiation

$$N_3 = 4$$

(I) Pre-application: Build a solid record

- Be on track to graduate (and/or postdoc) from a top university
- Do stellar research projects and papers
 - 1-3 “big” first-author contributions in top-tier conferences/journals
 - Be known for at least one *important* result!
 - Awards: e.g., Best Paper, Best Presentation, etc.
 - Citations
- Foster collaborations
 - **Strong** connections to **strong** academics
 - Internships (Microsoft Research!)
 - Industry Fellowships
- Maybe teach a little
 - Organize curriculum, teach lab sessions, advise undergrads
 - Doesn't seem to be necessary (but who knows?)

*Your track record
should speak for itself*

(I) Pre-application: Cultivate image

- Webpage, Curriculum Vitae, Google Scholar
 - Content > Formatting
 - Papers, Project Description, Talks/Videos
 - Clean > Flashy
- Your image to your network
 - Knowledgeable
 - Well-spoken
 - Trustworthy
 - Congenial

Don't be invisible!

*Cultivate as
early as possible!*

`"il faut cultiver notre jardin"`
`"We must cultivate our garden"`
– Candide (Voltaire)

(2) Apply



(2) Application (Late Fall)

- Curriculum Vitae
- Research Statement
- Teaching Statement
- Reference Letters

- (Cover Letter)
- (Diversity Letter)

(2) App: When/Where to apply?

- Look for “Tenure-Track Assistant Professor” openings
- EECS job openings appear in October, November, December
 - Computing Research Association: <http://cra.org>
 - jobs.ieee.org
 - academicjobs.wikia.com
 - higherjobs.com
 - IEEE publications
- Deadlines are (mostly) in December and January, but be careful

Side note: 2015-2016 was a good market for candidates

- *My strategy*
 - $S = \{\text{Top 40 Undergrad}\} \cup \{\text{Top 40 EE Grad}\} \cup \{\text{Top 40 CS Grad}\}$
 - Visit each department website for application details

	A	B	D	E	F	G	H	I	J	K	L
1	__School__	__UG Rank	CS Site	CS Areas	CS Date	CS Info	ECE Site	ECE Areas	ECE Date	ECE Info	Kat's Comments
2	MIT	7	https://www.eecs.mit.edu/resources/faculty-positions-beginning-september-2016	All areas	12/1/2015		Same (EI Circuits; Comput		10/31/2015	multiple	1-Planets (?)
3	Stanford University	4	http://www-cs.stanford.edu/jobs/faculty-opening	"Originality an	11/16/2015		https://ee	All areas, robotic	12/14/2015	2 positions	2-Nearby planets?
4	UC Berkeley	20	http://www.eecs.berkeley.edu/Faculty-Jobs/	"Originality an	11/16/2015		Same (EECS)				2-Nearby planets?
5	Carnegie Mellon	23	https://www.cs.cmu.edu/~scsdean/HiringPage/	CS, Real Worl	1/4/2016						Ew, Pittsburgh
6	California Institute of Technolo	10	https://applications.caltech.edu/job/cms	All areas, +lea	12/1/2015		https://ap	integrated circuit	12/15/2015		0-Planets!
7	Purdue		http://cra.org/job/purdue-university-tenure-tracktenured-faculty-positions/	All areas	10/1-11/27	7 openings -					0-Planets!
8	Michigan – Ann Arbor	29	https://www.si.umich.edu/aboutsi/open-faculty-positions	supported coc	12/15/2015		https://ww	all research aree	12/7/2015		1-Planets (?)
9	Georgia Tech	36	http://www.scs.gatech.edu/about/facultypositions	computer arch	1/1/2016		https://ac	urban systems, i	12/7/2015	Computational	1-Planets (?)
10	UIUC	41	http://cra.org/job/uiuc-faculty-positions-in-computing/	computing, br	12/15/2015	7 openings	https://jok	bio-electronics, computation, infor		ECE	Middle of nowhere
11	UT Austin		http://services.cs.utexas.edu/recruit/faculty/frontmatter/announcement_cs.html	computer visio	12/1/2015		https://ww	energy, cloud ar ?			1-Planets (?)
12	Texas A&M		https://www.tamengineeringjobs.com/postings/1414	theory, system	12/14/2015	multiple	http://eng	Remote Heal	12/1/2015	Center for Dis	Middle of nowhere
13	Cornell University	15	https://www.cs.cornell.edu/information/jobpostings/facultypositionsithaca	All areas	12/1/2015		http://www	All Areas	12/6/2015	multiple	1-Planets (?); middle of nowhe
14	USC	23	http://www.usc.edu/about/faculty-jobs/	All areas	12/15/2015	multiple op	http://ee	(1) infrastructure for data science;		multiple	2-Nearby planets?
15	UW Madison	41	https://www.cs.wisc.edu/about/employment	All areas	1/15/2016		http://www	Mobile Systems	4-Dec-2015	# 83890	No planets, but lots of remote
16	Princeton University	1	https://www.cs.princeton.edu/general/jobs/tenure-track	All areas	12/1/2015		http://ee	Information Sci	12/15/2015		No planets
17	University of Pennsylvania	9	http://www.cis.upenn.edu/faculty-staff/index.php	Machine Learn	11/15/2015	33% in 5 years					No planets
18	Harvard University	2	http://www.seas.harvard.edu/academic-affairs/faculty-research-lecturer-positions	machine learn	12/15/2015						1-Planets (?)
19	Virginia Tech		http://cra.org/job/university-of-virginia-eight-8-faculty-positions-in-cyber-physical-sys	Cyber physica	12/1/2015	8 openings					Middle of nowhere
20	Maryland College Park		http://cra.org/job/university-of-maryland-college-park-several-openings-for-faculty-pc	Computational	12/1/2015	several openings					2-Nearby planets
21	UC Santa Barbara	37	http://cra.org/job/university-of-california-sbtwo-tenure-track-positions/	Big Data, phys	12/16/2015	2 openings	http://www	Communications	12/15/2015		No planets; middle of nowhere
22	Johns Hopkins University	10	https://www.cs.jhu.edu/about/employment-opportunities/	All areas, +sys	12/15/2015		http://eng	microsystems ar	12/1/2015		0-Planets!
23	University of Washington		http://www.cs.washington.edu/faculty_candidates	All areas	12/15/2015		http://ap	big data, clean	12/31/2015		1-Planets (?)
24	Ohio State		http://cra.org/job/ohio-state-university-multiple-tenure-track-positions/	cybersecurity, ?		multiple positions					No planets (?)
25	CU Boulder		http://cra.org/job/university-of-colorado-boulder-assistant-professor/	secure and rel	12/7/2015	multiple po	https://ww	computer system	1-Dec-2015	F02845	0-Planets!
26	Yale University	3	http://cpsc.yale.edu/job-openings	All areas	12/1/2015		http://app	Many-core proc ?		(CE)	No planets
27	Vanderbilt	15	http://engineering.vanderbilt.edu/eecs/eecs_faculty_search.php	Big Data and	12/1/2015	2 positions		Same (EECS)			No planets
28	New York University	32					http://eng	Robotics, Power	1-Feb-2016		No planets; no geology
29	Brown University	14	https://cs.brown.edu/news/2015/10/23/brown-cs-announces-search-two-faculty-posi	(1) robotics, in	12/15/2015	2 positions	https://www.ece.ucsd.edu/recruitment				0-Planets!
30	University of Chicago	4	https://www.cs.uchicago.edu/page/employment	Theory, AI, Sy	1/1/2016						1-Planets (?)
31	UCLA	23	http://www.cs.ucla.edu/faculty-recruitment/	artificial intell	11/1 - 12/15		https://ee	novel circuits an	12/1/2015		2-Nearby planets?
32	Wash U St. Louis	15	http://cse.wustl.edu/aboutthedeptment/Pages/OpenFacultyPositions.aspx	tight integratio	12/1/2015		http://ese	signal processing	12/1/2015		Kat for two+ more years

*Keep an open mind!
Cast a wide net!*

(2) App: Carefully craft your package

- Research Statement (2-3 pages)
- Teaching Statement (1-2 pages)
- Put them on your website (along with your CV)
 - Include them in HTML
- I ***did not*** adapt these to each university
- Many good examples online!

*Demonstrate clarity
of knowledge and vision*

(2) App: Research Statement

THIS MATTERS A LOT!

- Who are you as a researcher?
 - Tag your domain expertise!
- What is your grand vision?
 - It should be novel and influential
- What have you achieved?
 - Cite your accomplished work
- What do you propose to accomplish?
 - Short-term vision + Long-term vision



(2) App: Teaching Statement

- Teaching philosophy (whatever this means)
- Teaching experience
- Which courses do you want to teach?
- Any new courses you want to develop?

(2) App: Cover Letter

I've been told this doesn't matter at all, but do a good job anyway

- Who are you?
- Which position are you applying for?
- Brief summary of what you bring to the table
 - Summarize your CV + Research Statement
- My strategy: LaTeX template and bash script to populate cover letters
 - (Then had friends Bryan Malone and Kat Powell review the PDFs)
 - (Kat caught that I was applying to the wrong Penn State. Oops.)



(2) App: Reference Letters

THIS MATTERS A LOT!

- 3-5 reference letter writers
 - Have backups
- **Well-known** professors and industry collaborators
 - Obviously, your advisor
- Make sure they will write strong, personal letters
- Continuously remind them of deadlines
- Some applications ask for reference letters after pre-screening

My references: Lin Zhong, Victor Bahl (MSR), Behnaam Aazhang, Gene Frantz, [Nic D. Lane]

(2) App: Submission

- Some standard sites (academicjobs.org, Vitae)
- Mostly non-standard sites, which is annoying.

*How I felt during
the application process:*



- The worst make you compile a PDF and email the PDF (*cough, ASU, cough*)
- Keep organized. I used Google Sheets.
- I would grab a few beers and submit 5-10 at a time

(2) Application (Late Fall)

- **Curriculum Vitae**
- **Research Statement**
- Teaching Statement
- **Reference Letters**
- Cover Letter
- (Diversity Letter)

*Demonstrate clarity
of knowledge and vision*

(2.5) Wait

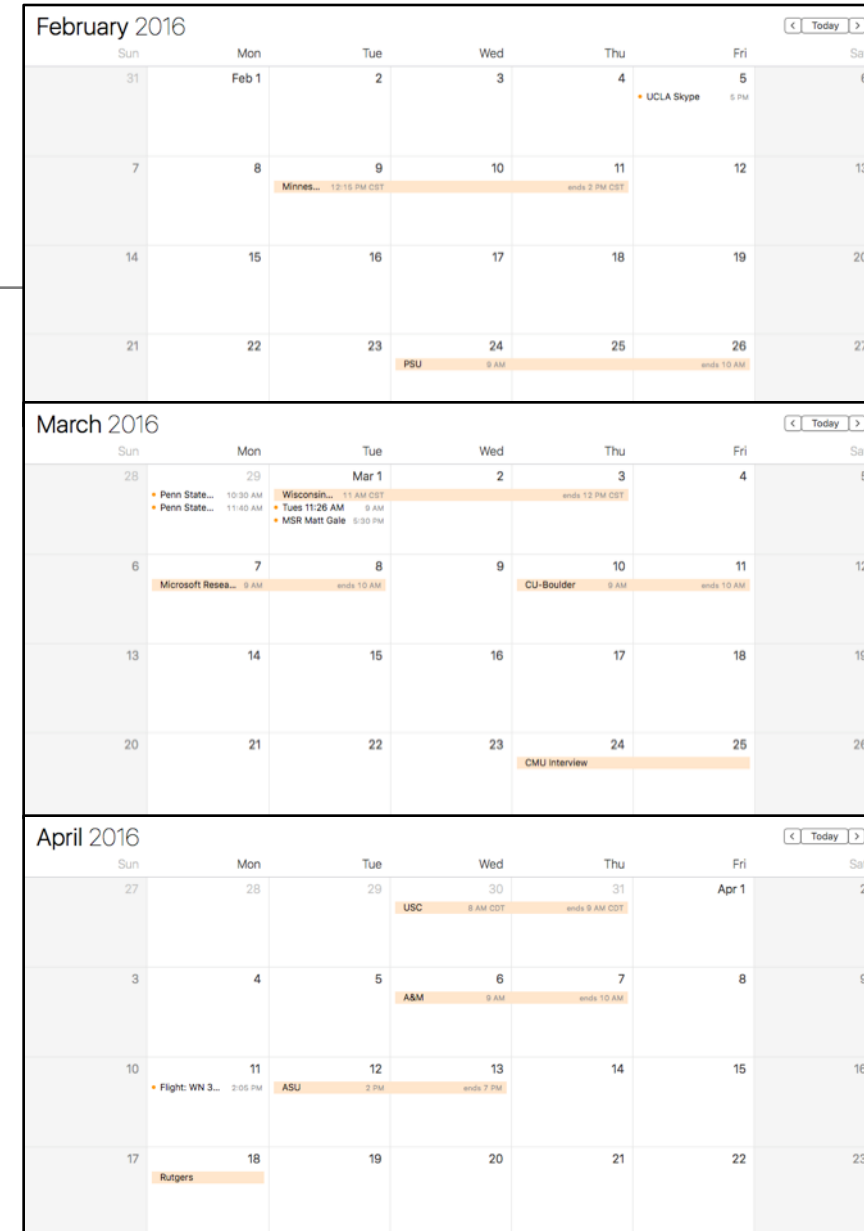


(2.5) Phone/Skype Calls (January)

- Be prepared to discuss your Research/Teaching Statements
 - Brief summary of who you are
 - Brief summary of your big projects
 - Dig into more detail about your future plans
 - Grants you'll write (NSF, DARPA, ONR, AFOSR, etc.)
 - Lab Space/Equipment/Personnel
- Try to figure out how you look/sound
- Take notes

(2.5) Schedule interviews

- Invitations all throughout Feb and even through April!
- Most invitations via personal e-mail by your “host”
- Try to schedule one a week so you can recuperate
 - Try to schedule preferred interviews 1/3 of the way in
 - (i.e., have practice runs)
- Find out what they want
 - Reference the call for applications
 - (but don't take too seriously)
 - Can use advisor-to-faculty sidechannel
 - Could ask the host directly
 - (I did this with ASU)



(3) Interview : 2 components

- Job Talk
- One-on-one meetings
- *Which one is more important?*

(3) Interview : 2 components

- Job Talk
- One-on-one meetings
- ~~Which one is more important?~~
- Trick question: Both are important and the weight doesn't matter
- **Technical depth > everything else**
- **Treat every interview as though it's your only interview**

(3) Interview: General Procedure

- 1, 1.5, or 2 days
- Job Talk
 - 45 min + 15 min Q&A
- One-on-one meetings
 - 30-45 minute slots
- (Meeting with students)
- (Meeting with panel)
- Breakfast + Lunch + Dinner!
- Dress comfortably and professionally
- *You're always on interview!*

Time	Name		Location
8:30 - 9:00			
9:00 - 9:30		Asst Prof	
9:30 - 10:00	Seminar Setup		
10:00 - 11:00	Seminar		
11:15 - 11:45		Dean	
11:45 - 1:15		Dir	
(Lunch -)		Prof	
1:15 - 1:30	BREAK		
1:30 - 2:00		Prof & Chair	
2:00 - 2:30		Prof	
2:30 - 3:00		Prof	
3:00 - 3:30		Prof	
3:30 - 4:00		Prof	
4:00 - 4:30		Prof & Chair	
4:30 - 6:00		Prof &	
(Dinner -)		Search Chair	

(3) Interview: Philosophy

- If you **know the enemy** and **know yourself**,
you need not fear the result of a hundred battles.
 - If **you know yourself** but **not the enemy**,
for every victory gained you will also suffer a defeat.
 - If you know **neither the enemy nor yourself**,
you will succumb in every battle.
- Sun Tzu, The Art of War

(3) Interview: Preparation

- Know yourself
 - Talk to your advisor(s) a lot!
 - Grow technical depth
 - Read, Read, Read
 - Systemize your knowledge
 - Study funding opportunities
 - Help on / Write a grant under your advisor
- Know your “enemy”
 - Faculty webpages/CV/papers
 - Don't have to study too deeply



(3) Interview: Job Talk (45 min. + 15 min. Q/A)

- 1 sentence: “I am a (tag) researcher!”
- 10 minutes: “This is my problem and it’s important!”
- 25 minutes: “Look at this stuff I worked on and where it will lead!”
 - 3-5 minutes: *“Technical deep-dive that loses most people in the room”*
- 10 minutes: “These are the future investigations I will pursue!”
 - “This will engage many different disciplines!”

(3) Interview: Job Talk (45 min. + 15 min. Q/A)

- Be crisp.
 - Use taglines!
 - Drive into principles.
- Be ambitious. Be audacious.
- Emphasize **novelty**, **depth**, and **potential**, while staying **accessible**
- Know your work inside and out and how it connects
 - Academic and industrial implications, comparisons, etc.

(3) Interview: One-on-ones (30 min.)

- Connect on an individual level
 - Professors like to talk about themselves
- You should be ready to talk about yourself
 - Specifics about your research
 - Funding sources
 - Specifics about courses
- Ask for info
 - Point blank: What are they looking for?
 - When will you hear back?

*Strive to engage
Not to impress
- Philip Guo*

(3) Interview

- Job Talk + One-on-one meetings
 - Technical depth > all else!
 - But be congenial before, during, and after the interview
 - Treat every interview as though it's your only interview
- Practice, reflect, and adapt!
 - Practice with faculty and with audiences if possible
 - I practiced with Lin, Lin, Lin, ..., Lin, Ashok, Behnaam, Rich
 - COMP 600, ECE Brown Bag
 - Keep the talk fresh
 - I have 40+ versions of my Job Talk on my computer
- Seek advice and moral support from faculty at Rice

(3.5) Post-Interview: Wait some more



(3.5) Offer procedure

- Faculty votes on your candidacy
- Decision can be immediate! Decision can take many months...
 - Timing multiple offers is difficult and stressful (More on this later)
 - I only got offers from schools that responded immediately (Perhaps because the market was hot?)
- ***An email will tell you that faculty have voted for you!***
 - At this point, you will usually* get the offer
 - (*school/department politics)
- Dean/Provost approval takes a week
- ***Then you get an offer letter!***

Equipment List

- Equipment needs
- Student needs
- Facility needs
- Give as much justification as possible
 - Chair needs ammunition to convince Dean

Formal offer (negotiable)

- The formal offer includes:
 - Position (prof.level, tenure, etc.)
 - Start date
 - Salary (including summer-salary conditions)
 - Research fund
 - Teaching load
 - Student support
 - Lab space
 - *Deadline for acceptance of the offer*
- Talk to your advisor and chair about negotiation stance
 - Ask for teaching relief, ask for student support, ask for sufficient equipment.
 - Salary? Two-body problem?
 - Use multiple offers to match

Timing the offers

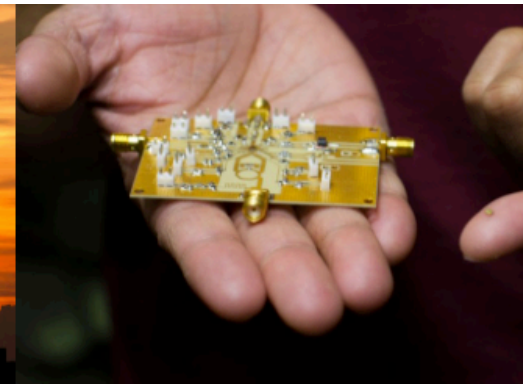
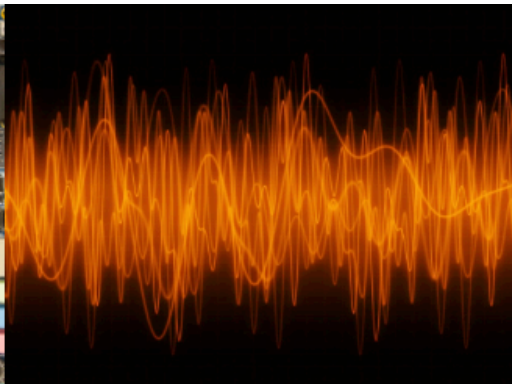
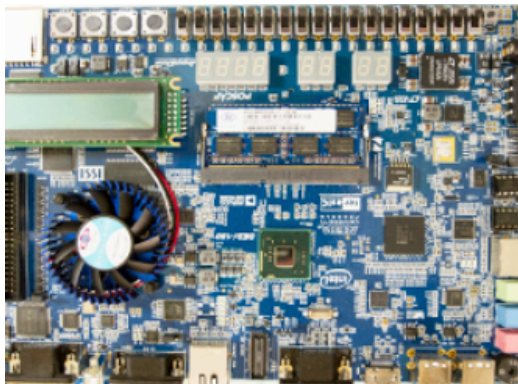
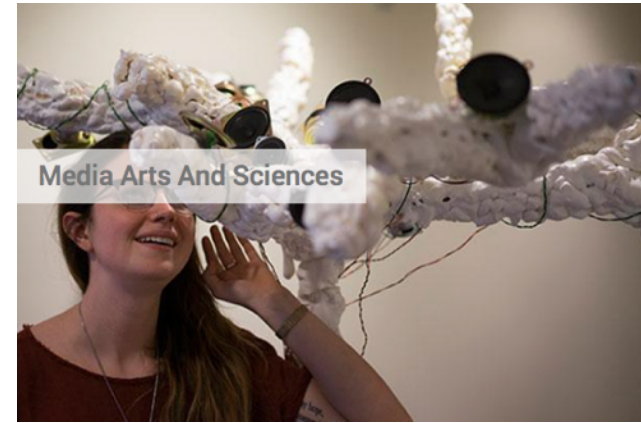
- Each offer is a 7 day timebomb
- Negotiate deadline extensions
 - Usually will get 7 additional days
 - Remember, they're considering other candidates
 - I was never unsuccessful in asking for extension (but I *always* felt *really* bad)
- Pressure the decision-making from other universities
 - This was more difficult and stressful than asking for extensions

Decisions

- Decision is difficult, of course
 - Will I attract good students?
 - Will I build fruitful collaborations?
 - Catch-22: You want a complementary domain fit, but you also want close expertise
 - Will my family be happy?
- Decline other offers
 - Easy to decline when you accept another offer
 - I used (location + sig. other) to justify early declines



Where I accepted:
Arizona State University
School of Arts, Media and Engineering &
School of Electrical, Computer and Energy Engineering



What I'm doing now...

- Preparing syllabus for ASU course: Mobile Systems Architecture
- Looking at student CVs
- Starting conversations with ASU collaborators
- Charting future project/proposal directions
- Putting final touches on my thesis dissertation

Questions?
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