On the Academic Interview Circuit: An End-to-End Discussion

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1 Prologue

This article summarizes my recent job search that effectively began in the late fall of 2000 and ended in the early summer of 2001. The opinions I express here are largely based on what I experienced, heard and read from various sources, and should be taken as mere tips or suggestions for Ph.D. students who are soon to graduate and look for a position in a research-oriented academic institution.

This is by no means a comprehensive guide to job searching: in limited space, I address only the issues that I deem more relevant or important, in an effort to provide information and insight that I believe is not readily available elsewhere. I do, however, try to provide pointers to (hopefully) complementary information throughout the text wherever appropriate and in Section 13.

Figure 1 illustrates the typical timeline for the entire process, from pre-application to final decision, and the documents and activities required at each stage. The rest of the article briefly discusses each of these stages.

2 Pre-Application Period

The realization comes pretty late, but this stage begins the moment one commences graduate school. Grades are important only to the extent they let you meet certain degree requirements. What is much more important is to do quality research and be able to get strong recommendations from three to four professors/Ph.D.s on graduation (see David Patterson's slides on having a bad research career [16]). Even though these two goals usually go hand-in-hand, they do not necessarily imply each other.

You should make a conscious effort to work on your communication and networking skills, which eventually become important deciding factors. In this respect, having a savvy advisor who promotes your research and introduces you to the community is a great help. One of my advisors, who always tried to take his students to at least one major conference every year, used to hold pre-conference "schmoozing for dummies" sessions that emphasized one of the major goals of attending conferences and other professional meetings.

You should also seriously consider doing an internship at a research lab. Spending even one summer in a lab will give you a good perspective on life/work outside academia and help you make a more intelligent career decision later. Furthermore, your lab supervisors will be good candidates for requesting recommendation letters. Finally, you should keep in mind that labs strongly prefer to hire people with whom they have previous experience.

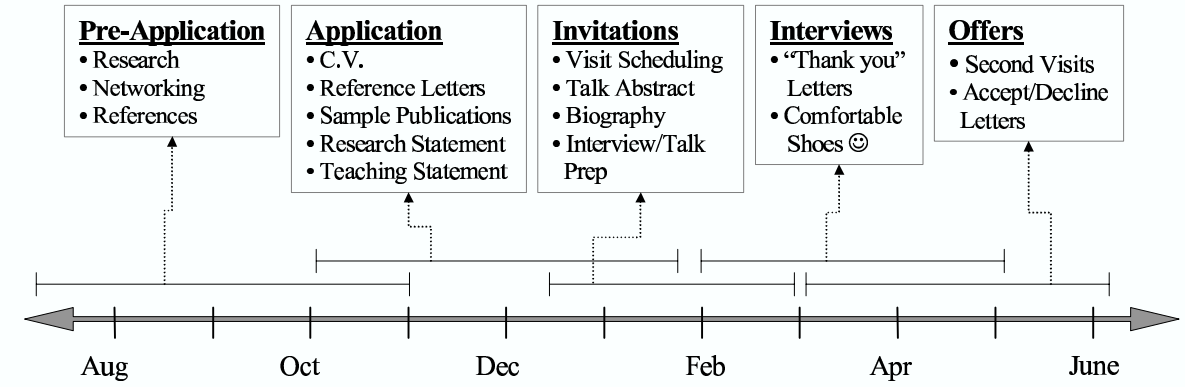

Figure 1: Application/Interview Timeline

3 Where to Apply?

There are many sources that post open positions (starting as early as August). I was primarily interested in heavily research-oriented academic institutions (and major research labs), and I had a pretty good idea regarding where to apply. Starting late September, I began examining the ads in the Communications of the ACM [1] and CRA [4], noting the ones that I was interested in and double-checking further information on the institutions' web sites. Other places that list job ads on-line are the Chronicle of Higher Education [2], IEEE [7], and the more specialized dbjobs [6].

I initially came up with a list of approximately 20 academic departments. My primary selection criteria were, in no specific order, the reputation of the organization, derivative of reputation (i.e., is the institution getting better or worse?), collaboration prospects, student quality, geographical area, and quality of living in the area. In order to get a rough idea about the departmental rankings, you can check out the 1999 US News ranking [10] or National Research Council's ranking [8] (based on early 1990's data).

There are different views on where and to how many places to apply. Some people think that application is *cheap* (especially now that many places accept on-line applications) and that you should apply to virtually all worthy places—even the ones that you might only be remotely interested in. Furthermore, it is nice to get in touch with people and promote yourself and your research, and achieve cross-fertilization. Other people think that it is appropriate to apply to only those places that you are seriously considering, as otherwise you would be wasting everybody's precious time. I tend to agree more with the former camp, not because applications are virtually free, but because in most cases you cannot really understand how desirable a place is without actually going there and talking with people—after all, it is all about people! I myself had a couple of pleasant surprises in places that initially did not seem very attractive.

I sent my preliminary list to my advisor, who made several suggestions. This feedback is a good opportunity to get an idea of your advisor's assessment of you, if you have not already done so. It is virtually impossible to land a decent job without your advisor's enthusiastic support. Some advisors go to great lengths to *create a market* for their students by making phone calls or sending mass e-mails that announce the student's entry into the market. Others may be unwilling to do this for philosophical reasons or because of how they rank the student. At any rate, if your evaluation does not match with that of your advisor, the best approach would be to reconsider your options and revise your choices.

4 Determining Your Letter Writers

You should make sure you have four references (some places require only three). Picking reference letter writers deserves careful thought. An enthusiastic letter from a well-reputed person is invaluable and can make all the difference towards paving the way for the interviews. My opinion is to choose people whom you have closely worked with and who are well informed about you and your work (as opposed to those who were selected solely because they were in your proposal/dissertation committee). If you have doubts about the kind of recommendation a person would give, use a tactful approach: ask whether he knows you and your work sufficiently and feels comfortable about recommending you (strongly). It is also a good idea to give him a heads up on the places you are considering and request feedback.

Having letter writers from different institutions (e.g., your internship supervisor) is also desirable, as it demonstrates that you have sufficient depth to successfully pursue topics not directly related to your thesis, and that you have the ability to work in harmony with different people. I was lucky to have as references two professors whom I had closely worked with and two outside Ph.D.s (both from research labs) with whom I worked on short-term projects and co-authored papers.

5 Preparing the Packet

The application packet typically consists of a c.v., a research statement, a teaching statement, reference letters, and sample publications. Before preparing your packet, gather several *successful* packets from friends who have recently gone through the same process. You can also expect to find many nice samples on the Web (see Section 13).

There are no general rules regarding the length of the individual documents, but it is wise to try to keep them as succinct and focused as possible. It is common for the institutions to receive hundreds of applications every season; you do not want people to get bored halfway through your statements. More concretely, try to limit your c.v. and research statement to three pages and your teaching statement to a single page.

After coming up with initial drafts, have (at least) your advisor and someone *outside* your research area to read it carefully and give you feedback, which you should consider seriously and reflect into your documents. Also make sure that your documents do not contain grammatical or typographical errors.

6 Making the Applications

It is important to be organized, especially if you are making many applications. I used a spreadsheet to maintain information about the status of my applications (e.g., application date/deadline, confirmation received, interview date, expenses, reimbursement received, etc.). Make every effort to send in an application by the requested date and make sure your letter writers also send their letters on time—it is not unusual to miss the first interview list because of late references. Some places ask the letters to be sent to them directly, whereas some prefer to contact your letter writers themselves. Remember that your letter writers are also busy people; they will need sufficient time to prepare and send their letters.

It is always a good idea to check the status of your file, especially if it is a place that you are very interested in. In many cases, the department contacts and requests the missing documents after a pre-evaluation (if they are interested in your case), but you should not count on that and be proactive.

Departments may have (and in most cases do have) objectives or priorities that are not clearly expressed in their job ad. Try to find a contact within the department who can give you the inside scoop—this might save you a lot of time and frustration later.

7 Scheduling the Interviews

Typically, either the department chair or one of the search committee members calls to extend an on-campus interview invitation (in general, good news comes by phone and bad news by mail). Some departments may prefer to make pre-interview screening calls, which, in my experience, are aimed either at evaluating the maturity of the candidate or at assessing how serious the candidate is about the position.

Scheduling the interviews is tricky because you do not receive all the invitations at the same time (some even arrive when you are on the road). Furthermore, earlier invitations usually come from places that have relatively lower-ranking programs. These places compete with higher-ranking places by scheduling interviews early and making quick offers with short deadlines, thereby forcing the candidate to make a quick decision (sometimes without having the chance to complete all the interviews).

The rule of thumb is to try to schedule your top choices not too early and not too late in the interview season. Scheduling early is not desirable because you will need at least a couple of interviews to polish your presentation and interview skills. Scheduling late is almost as bad for several reasons—the primary being the attenuated enthusiasm and interest on part of both the candidate and interviewers. You will no doubt be exhausted due to all the traveling and will find it hard to seem enthusiastic about your work. The department people, having seen up to three candidates every week since the beginning of the season, will understandably find it hard to show interest in you and your work.

One final benefit of scheduling less attractive places later is that, if you get an offer from a more attractive place, you may cancel some of your later visits. While in most cases people appreciate the honest behavior and respect for their time, I once had an unpleasant experience where I learned that several people were quite annoyed by the cancellation. In retrospect, I think it would be appropriate to cancel an interview only when there is sufficient time for the department to set up another visit in its place (which may require two to three weeks). If this is not possible, as one professor told me, "If you said you would go, you should go!"

Try to avoid extreme geographical zigzags in your trips by initially putting some slack in your schedule that you can properly fill as new invitations arrive. Try also to avoid more than two interviews per week. I once had to do three visits within a week and was really exhausted afterwards.

When I asked Mike Franklin what his foremost advice would be right before I started my interview rounds, his answer was "Be sure to sign up for frequent flyer programs, buy some pants with a waist size a bit bigger than what you currently wear (lots of fancy meals), and have fun!" I would also add to this a pair of truly comfortable shoes (as you will be on your feet most of the time) and a cell phone.

8 Interview

Once you get an interview, it is basically up to you and your performance to get the position. While you will no doubt be pre-occupied with what is ahead, try to get the most out of this once-in-a-lifetime experience: this is really one of the few times that so many people give you their full attention and are sincerely eager to hear what you say.

8.1 Meetings

Each interview day is typically filled with 30-minute meetings with faculty members, a dean (or provost), and students. Needless to say you, will have lunch and dinner with the faculty and students. You will also make a research presentation, which is supposed to last approximately an hour including Q&A.

You will surely be asked countless times to summarize your thesis research, so prepare a two-sentence summary, one-minute summary, three-minutes summary, etc., of your work. You should also be prepared to talk about your future research (more on this below) and teaching agenda.

I usually spent the first half of my meetings talking about my research and answering questions, and the second half asking questions. My questions mainly aimed to assess the health, quality, and resourcefulness of the department. I especially liked to talk with the junior faculty, asking them about what other places they considered, why they chose their present position, and how they liked it that far. I also asked about the tenure and promotion issues: the time frame, official and *non-official* evaluation criteria, and recent cases. I found meetings with the graduate students both fun and informative: students are dependable, rich information sources as they have little motivation to be discreet. You should definitely ask to meet with students because not all places schedule it automatically.

Typically the first and last meetings (called the *exit* interview) are with the department heads. The exit meeting's goals are to respond to any unanswered questions that you might have, to get your opinion about the day and the department, and to learn about your interview roster and decision timeframe (which will be used to decide whether and when to make an offer). Even if you had already decided not to consider the place further, you should state some positive things you observed during the day (there are always some). If the visit increased your interest and enthusiasm about the place, by all means state it (without sounding desperate about getting an offer).

In most cases, there is also a meeting with the dean or provost. This is a non-technical ad session where the dean does most of the talking (e.g., about the school, future growth plans, resource allocation, etc). In a couple of cases, I noticed apparent discrepancies between the dean's rhetoric and what the department people told me, which was not a good sign.

8.2 The Job Talk

The job talk is no doubt the most important part of the interview. The goal there is *not* to summarize your thesis work, but to give people a good idea about the kind of your research you do, make a solid argument about it, and seem enthusiastic about it. Ideally, the talk should also provide a vivid picture of your present research approach and agenda, and demonstrate that you have good taste (i.e., show that your work addresses important/relevant problems). The talk is also your opportunity to demonstrate your teaching abilities and reveal what kind of a teacher you might be.

Your presentation is the only time when many people in the department will see you, learn about your research, and form an opinion about you. One strong candidate I knew failed to get an offer because of a single arrogant response to a faculty member during his job talk. Later on I learned that the people who met with him one-on-one and those who only attended to his presentation developed very disparate opinions about the candidate.

It is always a good idea to respond to questions politically (regardless of how hostile or silly they may sound) and try to interact with the audience productively and agreeably. For instance, if someone asks you a question you have already answered, simply restate your answer without pointing out the repetition (others in the audience might do this for you). More attentive people will hopefully notice this and appreciate your attitude.

It is crucial to appear that you considered all aspects of your work thoroughly and to not get caught off guard by any question or comment. Also remember to give credit to good questions (i.e., those that are non-trivial and that you have a good answer for). If someone points out a limitation of your work, admit it and use it as a stepping-stone to discuss a relevant positive point.

I have seen many good candidates who underestimated the importance of "future work". I believe that you should have a good idea about your future work and spend at least a couple of slides on it. Your ideas need not be ground breaking, but they should go well beyond simple extensions of your thesis work. A well-articulated future work goes a long way towards establishing that you have a good vision and you are ready to become *your own person.* Academic institutions specifically look for this quality, as the successful candidate will be required to establish himself as an independent researcher.

Be confident, but more importantly be yourself. I heard a story of a candidate who displayed different professional personalities to the faculty and the students. In the end, even though the faculty liked the candidate enough to make him an offer, they decided not to when faced with strong opposition from the students (who simply could not see the candidate as an advisor due to his total lack of interest in working with students)—which also demonstrates how much student comments are valued at some departments.

You should be confident throughout the process: after all, you are the expert in the house and have reason to believe that you know the material better than anybody else around. Furthermore, several people told me that a candidate with the right dose of confidence/arrogance is remembered more favorably than others. However, it is important to find this fine balance. Nobody, not even arrogant people, likes arrogance.

9 Pondering Offers

I was actually relieved when I started receiving offers in early April. At the same time, I had to start juggling multiple offers because I wanted to postpone my deci-

sion as much as possible to be able see all the offers I would receive, whereas most departments wanted a quick decision in order to have sufficient time to extend the offer to others in case I decided to decline.

At this stage, a quick resolution is not likely as candidates typically wait to hear from top departments, who in turn wait to see all candidates before making the final decision[1], creating a ripple effect. This chain is eventually broken as top departments start making decisions in late April through early May.

Before making an offer, departments sometimes make an informal contact and try to assess their present ranking on the candidate's list. Extending an offer is a long process, and, understandably, the departments do not want to go through several meetings and multiple levels of confirmation for a candidate who is most likely to decline the offer.

The department chair usually extends the *initial* offer by calling and summarizing its basic dimensions. There is no point in holding on to offers longer than necessary. I always declined an offer as soon as I received a more favorable one. The departments appreciate it as this gives them more time to consider other candidates, and this way you will not be unnecessarily diminishing the prospects of other candidates. In order to decline an offer, I usually sent a thoughtful e-mail message to the department chair (cc'ed to my host), mentioning the positive aspects of the department and offer, and thanking them for their interest and time. Many people responded kindly and wished me luck in my future career. Note that calling to decline is much better (some people think that it is very rude not to call).

If you do not get an offer, do not take it too personally by attributing it to something that you did or did not do during the interview or to your qualifications. From the department's viewpoint, making a hiring decision is one of the most difficult tasks. This is where politics really hit the table and a balance between the individuals' and the department's (typically competing) priorities must be found in limited time. Furthermore, as much as we would like to believe otherwise, a purely democratic department does not exist as some individuals have more influence than others and can significantly affect the decision. I failed to get offers from places where I thought I delivered stellar performances. On the other hand, I received offers from places that I was not really optimistic about (and there was little or no correlation with the ranking/reputation of the departments).

[1] Recently, however, this has become less true for some departments (especially those large state schools with significant growth plans) who extend multiple concurrent offers. In fact, many places tend to extend more offers than they have available positions/resources for, playing probabilistic games regarding the number of offers that will eventually be accepted in the highly competitive market.

10 Negotiation

The terms of the initial offer are *always* based on the assumption that the candidate will negotiate. One important issue worthy of negotiation is the starting salary. It is wise (and rewarding) to spend some time to research the appropriate salary range for your position in compatible institutions and areas. You should definitely ask around (e.g., your advisors, department chair, and/or friends who are presently or have recently been in the market) and consult publicly available statistics (e.g., CRA's yearly Taulbee Survey [5]). If the offered salary is lower than what you would normally expect, you have more motivation to negotiate than otherwise.

No department wants to lose a candidate for a small compensation in salary, but one should also understand that salary is a tricky issue and, if handled clumsily, can create great dissatisfaction and resentment within the existing faculty. Compressions [12] (i.e., the narrowing over time of the pay differentials among the faculty) and inversions [12] (i.e., an extreme case of inversion where a newly hired junior faculty gets a salary higher than that of a senior faculty) have become commonplace in the computer science market due to the need to pay high initial salaries to attract qualified candidates. Looking at the long term, however, you should consider the possibility of getting an initially high salary and then get hit by severe compressions (or inversions) over the years (as the raises are kept down to compensate for the salaries of new hires). You should at the very least understand how departments handle these issues, and make an informed decision.

Departments are generally much more flexible in negotiating for resources that involve one-time costs such as equipment money and student support. A startup package typically consists of the following items:

- Funds to start up your laboratory (depends on your area of research, but it typically ranges between $25K and $100K);
- Reduced teaching load (for the first year or two);
- Summer salary support (for at least one year, or until you obtain external funds);
- Graduate student support (two or more graduate student years);
- Office and (maybe) home office equipment money;
- Travel money (for a couple of conferences/meetings for at least the first year); and

- Money for house hunting and moving expenses.

Given the lack of space in most schools, you should also make sure that you would have sufficient lab space.

The period between the offer and the time you accept it is when you have the most leverage to ask for anything that concerns you (especially if you have a competing offer). Do not hesitate to raise any issue that you feel is important at this stage because if you don't ask, the answer is always no! While it is important to see what is within reach and to secure the resources and support that you deem crucial for your success, I do not believe in the negotiation wisdom "If you get all you asked for, then you undersold yourself"—not for this deal. My suggestion would be to try to keep the rounds of negotiation to a minimum (one or two) and not try to wring out the last cent. In the long run, it is much more important to maintain a pleasant interaction with your colleagues.

11 The Decision

I had my final interview in the first week of May, at which point I already had a couple of offers that I was very happy with. I spent the following two weeks sorting out the final details and making second visits with my spouse. It was not easy to choose among nice offers—all seemed to provide me what I needed to be professionally satisfied and successful. Of course, since I had a (non-academic) two-body situation, my spouse's preferences and prospects were equally important. There was not a correct choice and, to a large degree, we believed in the motto "You create your own destiny wherever you go". Eventually, we resorted to the infallible criterion that subconsciously embodies all others: choose the place where you could best see yourself living and working.

We made the decision to accept Brown's offer on May 18, nearly three months after I started interviewing, and six months after I actively started preparing. The process was stressful, physically and mentally demanding, but eventually rewarding.

12 Epilogue

In my first morning at my new job, as I was sitting in my new office and looking at the empty desk and shelves for about twenty minutes, I came to realize what Stan Zdonik meant by "You are an entrepreneur: we give you a desk, a computer, and a telephone—good luck!"

13 Resources

There are many books that offer advice on all aspects of the road to an academic career. Reis's excellent book [17] provides insightful advice and strategies (uniquely backed by solid statistics and analysis) to graduate students who aspire to be academicians. Heiberger and Vick's handbook [15] presents a short but comprehensive discussion of the academic job search process—very convenient to keep it in your bag and read while on the road. Goldsmith *et al.*'s book [14] uses a conversational Q&A approach to discuss the bumpy road from graduate school to academic job search (and beyond).

The Computing Research Association [3], PhDs.org [9], and Chronicle of Higher Education [2] (some sections require subscription) are excellent places to start your search for on-line articles and information on academic careers. A more specialized service for the database crowd is dbjobs [6], which is "the database of database jobs". You can also find a wealth of related information and tips on the web sites of many higher institutions' career service centers (e.g., University of California, Berkeley's on-line Career Center [11] is a great resource).

There are many on-line articles that recap personal experiences of people from both sides of the interview table (use the key phrase "academic job search" on your favorite search engine). For instance, Dantzig's article [13] on landing an academic job talks about the pitfalls one has to be careful about. Sies's web page [18] provides a compact application checklists and a list of generic interview questions you should be prepared for. Spertus [19] presents the female take on the process and an academic two-body problem. Lingua Franca's "Who Got Hired & Where", which lists recent junior faculty hirings in many disciplines (including computer science), provides a good perspective on typical recruitment patterns.

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Biography

Uğur Çetintemel is an assistant professor at the department of Computer Science, Brown University. He received his doctorate degree in computer science from the University of Maryland, College Park in August 2001. Before that, he was at Bilkent University, Ankara, where he received his B.S. and M.S. degrees in computer engineering and information sciences in 1994 and 1996. His research focuses on data and resource management issues in advanced distributed systems and databases.