

2022-2023 US CS Faculty Job Hunting Experiences

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Hello everyone! I am Chong Liu, an Assistant Professor of Computer Science at the University at Albany, State University of New York (UAlbany). I participated in the 2022-2023 U.S. computer science faculty job market, had interviews at several universities, received multiple offers, and ultimately decided to join UAlbany. I received my Ph.D. in Computer Science from the UC Santa Barbara in 2023 and spent one year as the Data Science Institute Postdoctoral Scholar at the University of Chicago.

From November 2022, when I started applying, to May 2023, when I signed my contract, I went through the whole job hunting process as an ABD (all but defense) Ph.D. candidate. These six months were long and challenging. Reflecting on the difficulty of the application process, it seems necessary for me to write an article to share my experiences. While there are plenty of existing online guides and even templates for application documents, this article is not meant to serve as a comprehensive guide. Instead, I want to share my personal journey and insights from my own perspective, particularly focusing on common pitfalls faced by new Ph.D. candidate applicants. I will be very delightful if you find this article helpful! Feel free to share!

1 What You Need to Know Before Applying

1.1 Important Factors

When considering the factors that influence the outcome of a faculty application, here is my personal understanding of their importance, ranked in descending order:

- Research direction
- Potential to secure research funding
- Publications
- Recommendation letters
- Teaching experience and ability
- Academic services (e.g., serving as a conference chair or organizer)

It is widely acknowledged that publications and recommendation letters are critical in faculty applications. However, these two factors alone are far from sufficient. Other considerations, some even more important, play a role.

Research Direction. This is the most important factor. Many job postings explicitly show the research direction they are recruiting for, such as artificial intelligence, computer systems, or

quantum computing. These decisions are often made by the department to align with its teaching, research, or strategic goals. For such postings, applicants whose research direction does not match the specified focus generally have no chance.

Potential to Secure Research Funding. For assistant professors in computer science, the ability to secure funding is always an unavoidable topic. Research funding is essentially the “fuel” to support your research lab. Therefore, the hiring committee places significant emphasis on assessing the candidate’s potential to secure funding. How is this potential assessed? While it is related to publications and recommendation letters, it also depends on the applicant’s knowledge of funding opportunities and their plans for securing funding. For example, (1) Do you know which National Science Foundation (NSF) programs are relevant to your field? (2) Are you aware of the application limits for these programs? (3) What is an NSF Small Grant? What is the typical funding amount, and how long does it last? (4) What is your funding application plan for your first semester, first two years, and first five years? These are all questions that hiring committees take into account.

1.2 Differences Between a Ph.D. and a Faculty Role

The transition from a Ph.D. candidate to an assistant professor is significant. As a Ph.D. candidate, your primary focus is research. In contrast, as a professor, you are responsible for the entire research lifecycle. This includes, but is not limited to:

- Applying for research funding
- Conducting research
- Mentoring students
- Teaching courses
- Participating in academic services

If I were to compare this to an industrial position, professors are far more than educators who teach courses. Instead, they also perform roles similar to those in strategic planning (research ideas), administration (lab management), technical consulting (mentoring students), sales (presenting and promoting research), HR (recruiting students and staffs), and public relations (reviewing papers, organizing conferences, engaging with the community). Simply put, professors in computer science resemble entrepreneurs in academia. This multifaceted nature of the role is deeply reflected in every stage of the application process.

1.3 Faculty Job Market Is a Market

The faculty job market is essentially a marketplace where job seekers and hiring institutions interact as equals. Due to the relatively large number of job seekers and positions in computer science compared to other fields, the process is highly dynamic, random, and, at times, unpredictable.

For instance, I know someone whose interview process was abruptly canceled halfway through due to changes in the department’s budget. I also know someone who was unexpectedly offered a position at their dream school after higher-ranked candidates declined for various reasons.

Recognizing the randomness of the process is critical. No matter what happens, maintaining a calm and balanced mindset is essential. While the balance of power may vary depending on the year or circumstances, applicants and institutions are fundamentally equals in this process. As such, you should approach applications and interviews professionally, neither with arrogance nor desperation. Respect the time and effort invested by both sides.

1.4 Confidence Is the Key

When all other factors are comparable, confidence can be the decisive factor. A confident and professional demeanor can demonstrate your ability to handle challenges and reassure the hiring committee.

During the application process, especially in its early stages, it is easy to feel anxious or overthink. However, this kind of anxiety is counterproductive. The best mindset during interviews is to express genuine interest in the position while conveying a desire to engage in mutual understanding with the hiring committee. Avoid showing nervousness or insecurity, as these can detract from your presentation.

2 Timeline of the Faculty Application Process

In the U.S., the process for applying to computer science faculty positions is generally divided into four stages. Below, I will share my experiences and reflections on each stage based on my journey:

- Submission of application materials (usually October to January)
- Video interviews (usually December to March)
- Campus interviews (usually January to April)
- Offer negotiation and signing (usually February to May)

2.1 Stage I: Submission of Application Materials

In Fall 2022, I began looking at job postings. The main platforms I used were the Computing Research Association (CRA), Academic Jobs Online (AJO), and HigherEdJobs. Most job postings required the following application materials:

1. Curriculum Vitae (CV)

The CV should include your research interests, educational background, and publications, which are the most important components and should ideally appear on the first page. Beyond these essentials, you can also include:

- Your experiences applying for research funding (if applicable)
- Teaching experiences (including any TA work)
- Awards and honors
- Presentation experiences
- Academic services (e.g., serving as a conference chair, journal editor, or reviewer)
- Media coverage and community engagement

2. Cover Letter

This is a formal letter written in standard English business letter format. If possible, use a header featuring the logo of your current institution or organization. The letter should typically be one page long and briefly highlight your strengths across research, teaching, and services. If you've won any significant awards for your work, mention them here. The primary goal of the cover letter is to catch the interest of the hiring committee so they are motivated to examine the rest of your application.

3. Research Statement

This is a critical document in the application process. It will often shape the questions you are asked during interviews. A typical research statement has three main components:

- An introduction summarizing your research
- A detailed description of your published work
- A vision for your future research

It is essential to structure your research narrative around a cohesive and compelling framework. The framework should be *broad and important enough* to demonstrate the value of your research and *clear and specific enough* to align with the department's strategic priorities. Developing such a framework usually takes time and careful thought.

4. Teaching Statement

A teaching statement usually includes three areas:

- Your teaching experience, such as TA work or guest lectures. If you've taught a full course as an instructor, this is a great bonus. If you've received positive evaluations from students, attach them as supporting materials.
- Your teaching philosophy, which describes your approach to education and what you aim to achieve as an instructor.
- The courses you can teach, divided into three levels: (1) Courses you can confidently teach immediately (e.g., introductory machine learning for undergraduates). (2) Courses you can teach with minor preparation. (3) New courses you can create, often at the graduate level, based on your research expertise.

5. Recommendation Letters

Typically, three letters are required. At least one must be from your Ph.D. advisor (or postdoctoral advisor, if applicable). When selecting recommenders, prioritize those who are familiar with your work and include a variety of affiliations (e.g., collaborators from other institutions or industry).

Additionally, some job postings may request a diversity statement that discusses your commitment to diversity, equity, and inclusion in academia, or more than three recommendation letters.

2.2 Stage II: Video Interviews

After submitting your application materials, the next step is to wait for invitations to video interviews. This waiting period can be long and anxiety-inducing. Here are my main takeaways from the video interview stage:

- If you are invited for a video interview, it means your background is already strong enough. The committee has reviewed your application materials and found you promising enough to invest additional time in evaluating you. This should give you confidence rather than anxiety!
- The purpose of the video interview is for the hiring committee to get a more well-rounded understanding of you. They want to see what kind of person you are beyond the CV. Avoid simply repeating the achievements listed in your application materials, such as repeatedly

emphasizing your publications. This can make you seem overly eager and may shift the power dynamic in the interview. Instead, focus on showcasing your personality and determination for the position.

- The next step after a video interview is the campus interview. Use the video interview to provide compelling reasons why the committee should bring you to their campus! Research the department, the university, and even the local community to identify how your background aligns with their strategic goals. Emphasize why you are the “most suitable” candidate — not necessarily the “strongest” candidate — for the position.

After completing my first video interview, I felt much more relaxed and confident. I became familiar with the interview process, which significantly reduced my anxiety for subsequent interviews.

2.3 Stage III: Campus Interviews

The campus interview is the most important part of the faculty application process. It is the final stage before the hiring decision is made! My first campus interview was with a university on the East Coast. Here is what a typical campus interview day looks like:

1. 8:00 AM: Breakfast with the department chair.

This is a casual meeting where the chair may also give you a tour of the campus. The interview effectively begins as soon as you meet the chair, so aim to make a good impression from the start. Use this time to discuss light, engaging topics while mentally preparing for the rest of the day.

2. 10:00 AM: Job talk (1-hour presentation).

This is the most critical part of the campus interview. It serves three purposes:

- Faculty evaluate your research quality.
- Faculty use your presentation to generate questions for subsequent meetings.
- Faculty assess your teaching ability.

I recommend preparing extensively for the job talk. Practice with as many people as possible, including colleagues, students, and even non-experts, since your audience will likely be diverse. Strike a balance between accessibility and depth, ensuring that most faculty member understand your work’s significance while specialists appreciate your technical contributions.

3. 11:00 AM: Individual meetings with faculty members.

These are typically 30-minute one-on-one meetings with faculty members in the department. If the faculty member works in your research area, focus on discussing potential collaborations and gaining their support. If their research area is different, you can discuss broader topics, such as teaching or interdisciplinary collaboration opportunities.

4. 12:00 PM: Lunch with faculty members.

Lunch is often a more casual setting, but it is still part of the interview. Usually, at least two faculty members will accompany you to lunch. You can discuss lighter topics, such as housing, the local community, or the department culture. However, it’s also common for technical discussions to arise, so be prepared to engage in this kind of conversations.

5. 1:30 PM: Meeting with the dean.

This is an opportunity to understand the school and college at a higher level. The dean may discuss topics like:

- The school's financial situation (for public universities, this often involves state funding).
- Strategic priorities for the college or university.
- Recruitment plans for the college.
- Enrollment trends and student placement after graduation.

You can also use this time to ask questions about the university's resources and long-term plans.

6. 2:00 PM: Meeting with department administrative staff.

This is a chance to learn about practical aspects of the department, such as office and lab space, and computing resources and equipment.

7. 2:30 PM: Additional one-on-one meetings with faculty members.

These meetings are similar to the earlier ones but may involve different faculty members. Again, use these interactions to discuss potential collaborations, teaching, and broader academic topics.

8. 4:30 PM: Meeting with the department chair.

This is a formal meeting where the chair will often discuss key details about the position, including:

- Salary and benefits.
- Expectations for tenure (e.g., research output, teaching load).
- Departmental resources and startup funding.
- Teaching responsibilities and service expectations.

The department chair may also ask about your interest in the position and whether you have any questions. Use this opportunity to clarify any uncertainties.

9. 5:30 PM: Dinner with faculty members.

Dinner is another informal yet important part of the interview. Typically, at least two faculty members will take you to a restaurant, and the conversation can range from research to personal interests. While the tone is relaxed, it's still part of the evaluation process. Make an effort to engage and build rapport with the faculty.

10. 8:00 PM: End of the day and return to the hotel!

Although the formal schedule ends here, the interview is not entirely over. It is crucial to send personalized thank-you letters to: the dean, the department chair, and faculty members with whom you had substantial discussions. These thank-you notes not only show professionalism but also reaffirm your interest in the position.

2.4 Stage IV: Offer Negotiation and Signing

The final stage of the process is receiving and negotiating the offer. Typically, offers are made within two weeks to even two months after the campus interview. If you are in the first round of shortlisted candidates, you may hear back sooner. Here are some factors to consider when evaluating and negotiating an offer:

- Institution and Department

Does the institution provide a strong platform for your research? Are there opportunities for collaboration within the department or across departments? Does the department align with your long-term career goals?

- Salary and Benefits

Evaluate the base salary, retirement plans, and healthcare benefits. Compare the offer to typical salaries for assistant professors in similar institutions.

- Startup Funding

Startup funds are critical for establishing your research lab. Ensure the amount is sufficient to cover equipment, student salaries, and other research needs for the first few years. Clarify what can and cannot be covered by startup funds.

- Teaching Load and Expectations

Understand how many courses you will need to teach per semester, quarter, or year. Clarify whether you have flexibility in choosing the courses you teach.

- Geography and Lifestyle

Consider the location of the university. Does the local environment suit your personal and family needs (e.g., schools, housing, and amenities)?

- Tenure Track Expectations

Confirm the requirements for tenure, including publication benchmarks, grant expectations, and service contributions.

After evaluating these factors, you can decide whether to accept the offer or continue pursuing other opportunities. Remember that this is a long-term career decision, so take the time to carefully weigh all aspects of the offer.

3 Conclusion

Overall, the faculty job hunting is a long and challenging experience, especially for the first time PhD candidate applicant. However, if you are confident and mentally prepared for this job, you are always good to go! Good luck if you are on the faculty job market!