

Faculty Member Contact Information

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Contact Info	
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Department	Computer Science

1 Funded, 2 Unfunded URCA Assistant(s)

Are you willing to work with students from outside of your discipline? If yes, which other disciplines?

- No

How many hours per week will your student(s) be required to work in this position?
(Minimum is 6 hours per week; typical is 9)

- 9

Will it be possible for your student(s) to earn course credit?

- Yes, in CS495 Independent Study for 3 credit hours.

Location of research/creative activities:

- No location requirements.

Brief description of the nature of the research/creative activity?

- We will try to create software tools to optimize the training and inference of Large Language Models, Vision models, etc. I already have access to GPU clusters from various universities and need students to work on them.

Brief description of student responsibilities?

- Students will be responsible for writing Python programs, Bash scripts, running experiments, and collecting and analyzing data to optimize the training and inference of AI models. These activities require proficiency in Python (intermediate), PyTorch, Bash programming, Docker, and Linux OS. The plan is to write research papers that will

expose them to the world of research, teach them how to conduct it systematically, and how to document the outcomes.

URCA Assistant positions are designed to provide students with *research or creative activities* experience. As such, there should be measurable, appropriate outcome goals. What exactly should your student(s) have learned by the end of this experience?

- Students will learn to use the HPC cluster for AI training and inference.
- Students will learn and use PyTorch, Python libraries, bash programming and will write programs using them.
- Students will learn about Linux OS tools which are the backbone of most servers.
- Students will learn research and technical writing skills.

Requirements of Students

If the position(s) require students to be available at certain times each week (as opposed to them being able to set their own hours) please indicate all required days and times:

- Expected to attend one research meeting per week. A time will be chosen that accommodates everyone's schedules.

If the location of the research/creative activities involves off campus work, must students provide their own transportation?

- No transportation requirements.

Must students have taken any prerequisite classes? Please list classes and preferred grades:

- Required: CS325 (Software Engineering) done well in this course.
- Preferred: CS490 (Computing in healthcare) and CS314 (Operating System) done well in both.

Other requirements or notes to applicants:

- None