

## SUMMER RESEARCH PROGRAM OVERVIEW

USC's JumpStart Program aims to provide a pathway to PhD programs for undergraduate students.

JumpStart works with USC programs to invite diverse candidates from outside institutions to apply for 10-week in-person summer research opportunities in various PhD disciplines.

Available opportunities range from lab-based research to mentored participation in other types of faculty projects. The JumpStart program requires a full-time commitment.

JumpStart students present their research at the end of the 10-week program.



\*All admitted applicants must complete a second process related to stipend eligibility before starting the program. Stipend may be subject to taxation.

## PROGRAM BENEFITS

- \$5,000 Stipend\*
- Campus housing
- PhD Mentor
- Health insurance
- Parking passes
- PhD application fee waiver to USC
- Professional development sessions



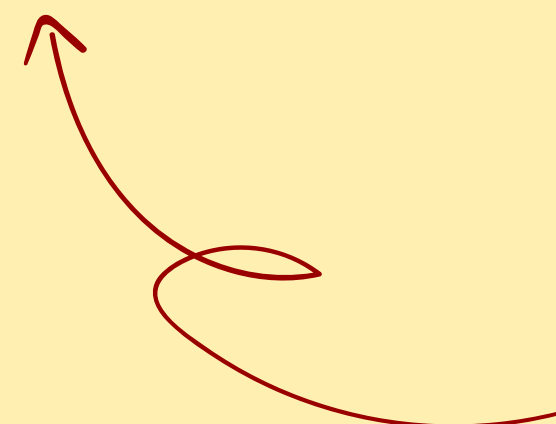
## ELIGIBILITY

- Interested in pursuing a Ph.D.
- Sophomores, juniors, and seniors enrolled in a 4-year college (and continuing as an undergraduate in Fall 2025)

OR

- Community college students with at least 30 completed transferrable units (in-state applicants only)

**APPLY NOW**







## APPLICATION REQUIREMENTS

- Personal statement about research interests
- Short statement about academic and professional goals
- Current Transcripts (official or unofficial)
- Resume or CV
- One (1) letter of recommendation from faculty

## PROGRAM DATES

- Application opens: January 2025
- Deadline to apply: February 28, 2025
- Program Starts: June 2, 2025
- Program Ends: August 4, 2025

## PROGRAM STRUCTURE

- Full-time commitment
- Research (approx. 30-35 hours in lab)
- Professional development sessions
- Meetings with PhD mentor
- Check-ins with staff
- Program dinners
- Community outings
- Poster Symposium at the end of the program

\*Unable to accommodate summer class or outside work obligation



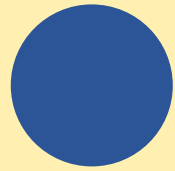
Please direct questions to the program coordinator at [GradDIA@usc.edu](mailto:GradDIA@usc.edu).

**APPLY NOW**

# OPPORTUNITIES BY MAJOR

A color-coded guide to find opportunities by major. This list is meant to be a guide only, please review each opportunity thoroughly.

## STEM



- Aerospace Engineering
- Applied Mathematics
- Biochemistry
- Bioinformatics
- Biology
- Biomedical Engineering
- Cell Biology
- Chemistry
- Cognitive Science
- Computational Biology
- Computer Engineering
- Computer Science
- Craniofacial Biology
- Data Science
- Developmental Biology
- Electrical Engineering
- Engineering
- Genetics
- Kinesiology
- Mathematics
- Mechanical Engineering
- Medicinal Chemistry
- Microbiology
- Molecular Biology
- Neurobiology
- Neuroscience
- Occupational Therapy
- Operation Research
- Pharmacology
- Physics
- Pre-Health Sciences
- Pre-Med
- Pre-Physical Therapy
- Statistics

## SOCIAL SCIENCES



- Child Development
- Developmental Psychology
- Education
- Geography
- Human Development
- Journalism
- Linguistics
- Psychology
- Public Policy
- Social Sciences
- Social Work
- Urban Planning
- Urban Studies

## HUMANITIES + ARTS

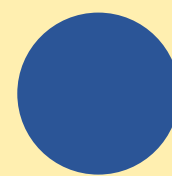


- Animation
- Cinema
- History

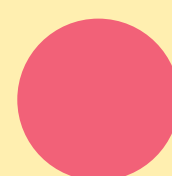
## LEGEND



Orange circle = Humanities

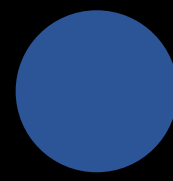


Blue circle = STEM



Pink circle = Social Sciences





## DR. SEO JIN PARK

### Flash burst inference

Nowadays, AI models are prevalent for important control applications where both accuracy and latency of inference are important for safety. For example, autonomous driving cars need to make not only highly accurate but also timely decisions. Due to the limitation of computing power of edge devices (cars, robots, drones, etc), there is a significant limit on model sizes for these important applications. In this project, we will explore how to augment these on-edge low-accuracy inferences with on-cloud high-accuracy inferences on the cloud. When there is a sudden need for high-accuracy inferences, our system aims to finish the computationally intensive high-accuracy inference by harnessing hundreds of cloud GPUs in parallel. This project will explore the potential of many parallelization techniques including sequence parallelism via speculative decoding and tensor parallelism.

## STUDENT LEARNING OUTCOMES

Students will learn how to distribute DNN models to speed up inference.

## PREFERRED MAJORS

Computer Science; Prefer students with prior experience with LLM or VLM models.

## CAMPUS

University Park Campus

## OPEN TO

4-year college students