Vinayak Gajjewar

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RESEARCH STATEMENT

I am interested in the intersection of IoT, distributed systems, and scalable spatial analytics. Specifically, I want to bring geospatial and spatio-temporal applications to resource-constrained computing environments in a scalable and fault-tolerant manner.

EDUCATION

Ph.D., Computer Science   Expected June 2028
University of California, Santa Barbara

- GPA: 4.0/4.0

- Advisors: Chandra Krintz and Rich Wolski

- Research topics: IoT + distributed systems + GIS

- Selected coursework: Scalable Internet Services (291A), Runtime Systems (263), Blockchain and Distributed Systems (293B), Operating Systems (270)

Bachelor of Science, Computer Science   Graduated June 2023
University of California, Riverside

Adrian Wilcox High School *(Santa Clara, CA)*   June 2019

SKILLS

Unix/Linux, Python, Django, C, C++, Docker, Git, Java, Scala, Maven, Spark, Hadoop, Node.js, JavaScript, TypeScript, MongoDB

PUBLICATIONS

Singla, Samriddhi, Ayan Mukhopadhyay, Michael Wilbur, Tina Diao, Vinayak Gajjewar, Ahmed Eldawy, Mykel Kochenderfer, Ross Shachter, and Abhishek Dubey. "Wildfiredb: An open-source dataset connecting wildfire occurrence with relevant determinants." In NeurIPS Thirty-fifth Annual Conference on Neural Information Processing Systems. 2021.

EXPERIENCE

Software Products Intern   Summer 2024
Esri Inc., Redlands, CA

- Used TypeScript, CloudFormation, and Electron to develop an application for deploying ArcGIS Enterprise to AWS.

Undergraduate Researcher   Summer 2023
UC Riverside Big-Data Lab, Riverside, CA

- Contributed to the development of Raptor, a Raster + Vector query processing engine written in Java and Spark for manipulating and visualizing geospatial data.

Software Products Intern   Summer 2022
Esri Inc., Redlands, CA

- Used Node.js to write a framework for connecting remote data sources (e.g., databases, APIs) to the Esri software ecosystem.

- Wrote technical documentation and code samples for new features of ArcGIS Enterprise.

Research Fellow   May 2021 - May 2022
Digital Agriculture Fellowship, Riverside, CA
- Used Maven and Apache Spark to build a scalable analytics system that uses satellite data to compute wildfire spread, resulting in a 2 order of magnitude performance increase over the state of the art.

Instructor   Summer 2020
iD Tech Camps, Santa Clara, CA
- Tutored 50+ K-5 children on various topics in computer science, from basic programming concepts to video game development.

Computer Science Intern   Summer 2018
SchoolCity Inc., Santa Clara, CA
- Developed a data analytics application that extrapolates patterns in School City product usage across school districts using MongoDB and Express.js.

TALKS

2023 — Implementing a Distributed Evapotranspiration Model. (2023). 2023 UCR Undergraduate Research & Creative Activities Symposium. Riverside, CA.
2021 — Increasing the Efficiency of Geospatial Data Processing. (2021). Research in Science & Engineering Symposium. Riverside, CA.

AWARDS & HONORS

2023 — ASA, CSSA, SSSA Outstanding Senior (19 seniors recognized nationally)
2021 — Digital Agriculture Fellowship (Artifical Intelligence for Sustainable Agriculture)

SELECTED PRESS

Ober, Holly. (December 8, 2021.) Wildfire dataset could help firefighters save lives and property. UCR News Archive. https://news.ucr.edu/articles/2021/12/08/wildfire-dataset-could-help-firefighters-save-lives-and-property