Jared Coleman

jaredraycoleman.com

jared.coleman@lmu.edu

EDUCATION

University of Southern California — Los Angeles, CA
Ph.D. in Computer Science; GPA: 4.0 — *Aug 2020 – May 2024*

  Dissertation: Dispersed Computing in Dynamic Environments
  Advisor: Bhaskar Krishnamachari

California State University, Long Beach — Long Beach, CA
Master of Science in Computer Science; GPA: 4.0 — *Aug 2018 – May 2020*
Bachelor of Science in Computer Science; GPA: 3.6 — *Aug 2013 – May 2018*

  Thesis: Minimizing The Maximum Distance Traveled To Form Patterns With Systems of Mobile Robots
  Advisor: Oscar Morales-Ponce

RESEARCH INTERESTS

Cooperative multi-agent systems, distributed computing, decentralized computing, online algorithms, distributed ledger technology, internet of things (IoT), artificial intelligence (AI), and large language models (LLMs) for language education and endangered language revitalization.

EXPERIENCE

Loyola Marymount University — Los Angeles, CA
Assistant Professor — *Aug 2024 – Present*

The Aerospace Corporation — El Segundo, CA
Member of the Technical Staff — *Mar 2020 – Jun 2024*
Associate Member of the Technical Staff — *Sep 2018 – Mar 2020*
Intern — *Jan 2018 – Aug 2018*

- Design software and algorithms for rapidly developing scalable, modular, and efficient analyses for launch vehicle verification in simulation, day-of-launch, and post-flight environments.

CSULB Research Foundation — Long Beach, CA
Student Research Assistant — *Mar 2017 – May 2018*

- Developed software and simulations for systems of cooperative robots.

Big Pine Paiute Tribe of the Owens Valley — Big Pine, CA
IT Intern — *May 2014 – Aug 2014*

- Organized computer skills workshops for high school students in a tribal work experience program
- Developed membership management software for the tribal wellness center

TEACHING EXPERIENCE

Distributed Systems & the Internet of Things — Los Angeles, CA
Teaching Assistant — *Spring 2023*

Principles of Software Engineering — Los Angeles, CA
Teaching Assistant — *Fall 2020*

Organization of Programming Languages — Long Beach, CA
Teaching Assistant — *Spring 2020*

Object-Oriented Application Development — Long Beach, CA
Teaching Assistant — *Spring 2020*

Speaking — Itajubá, MG, Brazil
English Teacher — *2016*

Professional Service

SC24 — International Conference for HPC, Networking, Storage, and Analysis	Atlanta, GA
Technical Program Committee	*Nov 17-22, 2024*
Problem Solving with Cooperative Mobile Agent Systems	São Carlos, Brasil
Guest Lecture at Institute of Mathematics and Computer Science, USP, São Carlos	*April 26, 2023*

Mentorship

Alex Sotiropolous (Masters), Linus Lei (Undergrad)
Crowdsourcing LLM Fine-Tuning   *2023*

Eric Cheng, Helen Hu, Max Li, Melanie Xiao Xuan Toh, Sana Jain (Undergrads)
LanguageGames: open-source modular minigames for language education   *Fall 2023*

Eason Qin, Flora Jia, Lorena Yan (Undergrads)
AskANRG: LLM-powered chatbots tailored for research groups   *Fall 2023*

Dominick Hart (High School)
LLM-powered NPCs for language education through video games   *Summer 2023*

Ebrahim Hirani, Ravi Vivek Agrawal (Masters), Linus Lei, Sanjana Adapala (Undergrad) Saamarth Seth (High School)
Python implementations of task graph scheduling algorithms   *2023*

Chely Fernandez (Undergrad)
Blockchain-secured Industrial IoT   *2022*

Lorand Cheng (Undergrad)
Search and Rescue on the Line   *2021*

Wanwiset Peerapatanapokin (Undergrad)
Blockchain-secured Industrial IoT   *2020*

Honors & Awards

Cobell Scholar
The Cobell Scholarship   *2023-2024*
Awarded to high-achieving, community-involved Native college students with leadership experience.

CPS Rising Star
2023 CPS Rising Stars Workshop   *2023*
This workshop aims to identify and mentor outstanding PhD students and postdocs who are interested in pursuing academic careers in Cyber-Physical Systems (CPS) related areas

First-Place Winner
2nd Student Design Competition on Networked Computing on the Edge @ CPS IoT Week 2022   *2022*
Graph Convolutional Network-based Scheduler for Distributing Computation in the Internet of Robotic Things

Publications

[15] **Linear Search for an Escaping Target with Unknown Speed**
Jared Coleman, Dmitry Ivanov, Evangelos Kranakis, Danny Krizanc, Oscar Morales-Ponce
IWOCA 2024 — 35th International Workshop on Combinatorial Algorithms

[14] **Online Allocation of Sensing and Computation in Large Graphs**
Xinlin Li, Merve Karakas, Osama A. Hanna, Mehrdad Kiamari, Jared Coleman, Christina Fragouli, Bhaskar Krishnamachari, Gunjan Verma
IEEE CIC 2023 — International Conference on Collaboration and Internet Computing

[13] **DARSAN: A Decentralized Review System Suitable for NFT Marketplaces**
Sulyab Thottungal Valapu, Tamoghna Sarkar, Jared Ray Coleman, Anusha Avyukt, Hugo Embrechts, Dimitri Torfs, Michele Minelli, Bhaskar Krishnamachari
ICBC 2023 — International Conference on Blockchain

[12] **Search and Rescue on the Line**
Jared Coleman, Lorand Cheng, Bhaskar Krishnamachari
SIROCCO 2023 — International Colloquium on Structural Information and Communication Complexity

[11] **PhD Forum Abstract: Cooperative Problem-Solving with Systems of Constrained Mobile Agents**
Jared Ray Coleman
IPSN 2023 — International Conference on Information Processing in Sensor Networks

[10] **Graph Convolutional Network-based Scheduler for Distributing Computation in the IoRT**
Jared Coleman, Mehrdad Kiamari, Lillian Clark, Daniel D'Souza, Bhaskar Krishnamachari
MILCOM 2023 WS-7 — Workshop On The Internet Of Things For Adversarial Environments

[9] **Delivery to Safety with Two Cooperating Robots**
Jared Coleman, Evangelos Kranakis, Danny Krizanc, Oscar Morales-Ponce
SOFSEM 2023 — International Conference on Current Trends in Theory and Practice of Computer Science

[8] **The Snow Plow Problem: Perpetual Maintenance by Mobile Agents on the Line**
Jared Coleman, Oscar Morales-Ponce
ICDCN 2023 — International Conference on Distributed Computing and Networking

[7] **Line Search for an Oblivious Moving Target**
Jared Coleman, Evangelos Kranakis, Danny Krizanc, Oscar Morales-Ponce
OPODIS 2022 — International Conference on Principles of Distributed Systems

[6] **Multi-Objective Network Synthesis for Dispersed Computing in Tactical Environments**
Jared Coleman, Eugenio Grippo, Bhaskar Krishnamachari, Gunjan Verma
SPIE Defense + Commercial Sensing 2022

[5] **Network Synthesis for Tactical Environments: Scenario, Challenges, and Opportunities**
Tzanis Anevlavis, Jonathan Bunton, Jared Coleman, Mine Dogan, Eugenio Grippo, Abel Souza, Christina Fragouli, Bhaskar Krishnamachari, Matthew Maness, Karl Olson, Prashant Shenoy, Paulo Tabuada, Gunjan Verma
SPIE Defense + Commercial Sensing 2022

[4] **Robotic Sorting on the Grid**
Jared Coleman, Oscar Morales-Ponce
ICDCN 2022 — 23rd International Conference on Distributed Computing and Networking

[3] **Message Delivery in the Plane by Robots with Different Speeds**
Jared Coleman, Evangelos Kranakis, Oscar Morales-Ponce, Danny Krizanc
SSS 2021 — 23rd International Symposium on Stabilization, Safety, and Security of Distributed Systems

[2] **The Pony Express Communication Problem**
Jared Coleman, Evangelos Kranakis, Oscar Morales-Ponce, Danny Krizanc
IWOCA 2021 — 32nd International Workshop on Combinatorial Algorithms

[1] **Minimizing The Maximum Distance Traveled To Form Patterns With Systems of Mobile Robots**
Jared Coleman, Evangelos Kranakis, Oscar Morales-Ponce, Jorge Urrutia, Birgit Vogtenhuber
CCCG 2020, 32nd Canadian Conference on Computational Geometry, August 5-7, 2020

Projects

Kubishi Sentences (sentences.kubishi.com)
LLM-powered sentence building and translation tools for the Owens Valley Paiute Language   *2024*

ChatLang (chatlang.net)
An LLM-powered role-playing bot with parallel tutor assistance   *2023*

GCN-Turtlebot (github.com/ANRGUSC/gcnschedule-turtlenet)
GCN-based Scheduler for Distributing Computation in the Internet of Robotic Things
First-place winner: 2nd Student Design Competition on Networked Computing on the Edge at CPS IoT Week   *2022*

Secure IIoT   Industry Partner: Chevron
Using blockchain technology to secure industrial IoT systems   *2021-2023*

Kubishi (kubishi.com)

An online dictionary and encyclopedia for Owens Valley Paiute language and culture   *2020*

Aerocube @ The Beach   Industry Partner: The Aerospace Corporation

Distrubuted robotics systems for space — a proof of concept   *2017*