Jared Coleman

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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 endangered language revitalization.

Experience

University of Southern California — Los Angeles, CA
Adjunct Research Assistant Professor of Electrical and Computer Engineering — *July 2024 – Present*

Coinbase — Remote
Consultant - Machine Learning Engineer — *Jan 2024 – Present*

Loyola Marymount University — Los Angeles, CA
Assistant Professor of Computer Science — *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*

- Designed 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

Online and Decentralized Algorithms — Loyola Marymount University
Professor — *Spring 2025*

Algorithms and Analysis — Loyola Marymount University
Professor — *Fall 2024, Spring 2025*

Distributed Systems & the Internet of Things — University of Southern California
Teaching Assistant — *Spring 2023*

Principles of Software Engineering — University of Southern California
Teaching Assistant — *Fall 2020*

Organization of Programming Languages — California State University, Long Beach
Teaching Assistant — *Spring 2020*

Object-Oriented Application Development — California State University, Long Beach
Teaching Assistant — *Spring 2020*

Professional Service

WISDOM 2025 Workshop — San Diego, CA
Program Committee Member — *July, 2025*

National Science Foundation
Advisory Panel Member — *Spring 2025*

CCGrid 2025 — Symposium on Cluster, Cloud, and Internet Computing — Tromso, Norway
Artifact Track Program Committee Member — *February, 2025*

SC25 — International Conference for HPC, Networking, Storage, and Analysis — St. Louis, MO
Reproducibility Committee Member — *February, 2025*

International Journal of Computing and Technology
Reviewer — *January, 2025*

Journal of Computer and System Sciences
Reviewer — *December, 2024*

GHTC 2024 — IEEE Global Humanitarian Technology Conference — Philadelphia, PA
Track Chair — *Oct 23-26, 2024*

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 / Advising

Diego Cuadros (Undergrad)
Retreival Augmented Generation for LLM-powered Low-Resource Machine Translation — *2024 - present*

Kathan Pathak (Masters)
Culturally Appropriate Image Generation for Language Education — *2024 - present*

Gabriel Twigg-Ho, Matias Martinez Gonzalez, and Jason Chamorro (Undergrad)
Stochastic Task Graph Scheduling — *2024 - present*

Rohin Gupta (High School)
Using Simulated Annealing for Task Graph Scheduling — *2024 - present*

Alex Sotiropolous (Masters), Linus Lei (Undergrad)
Crowdsourcing LLM Fine-Tuning — *2023 - 2024*

Eric Cheng, Helen Hu, Max Li, Melanie Xiao Xuan Toh, Sana Jain (Undergrad)
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

[21] **Linear Search with Probabilistic Detection and Variable Speeds**
Jared Coleman, Oscar Morales-Ponce
To Appear at IWOCA 2025 - The 36th International Workshop on Combinatorial Algorithms

[20] **Extended Abstract: A Chatbot for Endangered Language Research**
Diego Cuadros, Jared Coleman, Ruben Rosales, Glenn Nelson
AmericasNLP @ NAACL 2025 - 5th Workshop on NLP for Indigenous Languages of the Americas

[19] **Evaluating Scheduling Algorithms for Adaptive Orchestration in Federated Tactical Edge Cloud Environments**
Alessandro Amato, Harrie Bastiaansen, Jared Coleman, Willem Datema, Mattia Fogli, Johan van der Geest, Bhaskar Krishnamachari, Thomas Kudla, Pablo Sanchez, Niranjan Suri
ICMCIS 2025 — International Conference on Military Communications and Information Systems

[18] **Multimodal Search on a Line**
Jared Coleman, Dmitry Ivanov, Evangelos Kranakis, Danny Krizanc, Oscar Morales-Ponce
SIROCCO 2025 — International Colloquium on Structural Information and Communication Complexity

[17] **PISA: An Adversarial Approach To Comparing Task Graph Scheduling Algorithms**
Jared Coleman, Bhaskar Krishnamachari
IPDPS 2025 - The 39th International Parallel and Distributed Processing Symposium

[16] **LLM-Assisted Rule Based Machine Translation for Low/No-Resource Languages**
Jared Coleman, Bhaskar Krishnamachari, Khalil Iskarous, Ruben Rosales
AmericasNLP @ NAACL 2024 - 4th Workshop on NLP for Indigenous Languages of the Americas

[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

Other Research Products

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

Kubishi Dictionary (dictionary.kubishi.com)
An online dictionary for the Owens Valley Paiute language — *2020 - present*

ChatLang (github.com/ANRGUSC/chatlang)
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 Application Industry Partner: Chevron
Using blockchain technology to secure industrial IoT systems *2021-2023*

Aerocube @ The Beach Industry Partner: The Aerospace Corporation
Distrubuted robotics systems for space — a proof of concept *2017*

Media Coverage

Why some endangered language speakers have to get creative with AI preservation efforts
Nichole Currie, WHYY (PBS/NPR)
December 9, 2024

Revitalizing Critically Endangered Languages via Large Language Models
Loyola Marymount University Newsroom
November 14, 2024

Imagine Hearing A Distant Relative Telling Stories in a Nearly Forgotten Language. What Would You Do?
Greg Hardesty, USC Viterbi, School of Engineering
June 20, 2024