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

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

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*

- 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

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)	
Retrieval 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

[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
To Appear at 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
To Appear at 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
To Appear at 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