Joseph Oglio

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Citizenship: United States of America
Born: August 9th, 1999

WORK EXPERIENCE

Research/Teaching Assistant, Kent State University, November 2019 – Present

- Studied conventional and cutting-edge cryptocurrencies, blockchain technologies, and consensus algorithms, while developing several C++ based consensus algorithms and a testbed for simulating networks which resulted in the publication of several papers.
- Investigated task-free continual learning for image classification, implemented a dynamic neural architecture that adaptively grows expert networks to address catastrophic forgetting.
- Taught the lab portion of the courses CS1 and CS3 which go over basic and advanced concepts in the C++ programming language as well as modern design patterns.
- Supervised students: Jason Graham, Andrew Leonard, Joe Demore, Ethan Morris

Data Scientist, OpenBlock Labs Inc, March 2024 – November 2024

- Optimized blockchain data pipelines, analyzing over $40B in trade volume and identifying over $18B in arbitrage and wash trades for actionable insights.
- Designed advanced dashboards using Dune Analytics to track trading volume, user behavior, and incentive effectiveness, improving client decision-making during DeFi incentive campaigns.

Intern, ZIN Technologies, Inc., June 2018 – November 2019

- Developed software-based engineering tools to convert the trajectories of satellites between reference frames and visualize the results.
- Tested the feasibility of using game engine physics engines for mission development.

Intern, NASA, January 2018 - June 2018

- Created MATLAB tools to compute satellite trajectories and determine communication intervals based on obstructions, viewing angles, and atmospheric conditions.
- Designed optimized scheduling software to support mission success across competing goals.

Intern, Alcoa, May 2017 - June 2017

- Performed experiments to calculate the heat transfer coefficient of metals used during the tire forging process.

PUBLICATIONS

- D. Foreback, M. Nesterenko, J. Oglio and S. Tixeuil. "Connected Topology Maintenance Under Unlimited Churn" In preparation.
- J. Oglio, M. Nesterenko, and G. Sharma. "SmartShards: Churn-Tolerant Continuously Available Distributed Ledger" *International Conference on Networked Systems (NETYS)*, To appear.
- J. Oglio, M. Nesterenko, and G. Sharma. "TRAIL: Cross-Shard Validation for Byzantine Shard Protection." *International Symposium on Stabilizing, Safety, and Security of Distributed Systems* (SSS), October 2024.
- J. Oglio, K. Hood, G. Sharma, M. Nesterenko, "Consensus on an Unknown Torus with Dense Byzantine Faults" *International Conference on Networked Systems (NETYS)*, May 2023.
- J. Oglio, K Hood, M. Nesterenko, S. Tixeuil, "QUANTAS: Quantitative User-friendly Adaptable Networked Things Abstract Simulator", *Workshop on Advanced tools, programming languages, and PLatforms for Implementing and Evaluating algorithms for Distributed systems,* July 2022

- J. Oglio, K. Hood, G. Sharma, M. Nesterenko “Byzantine Geoconsensus”, *International Conference on Networked Systems (NETYS),* May 2021, (Best Student Paper Award)
- K. Hood, J. Oglio, M. Nesterenko, G. Sharma “Partitionable Asynchronous Cryptocurrency Blockchain”, *IEEE International Conference on Blockchain and Cryptocurrency,* May 2021
- J. Oglio, K. Hood, G. Sharma, M. Nesterenko “Brief Announcement: Byzantine Geoconsensus”, *Symposium on Stabilization, Safety, and Security of Distributed Systems* (*SSS*), pp. 199-204, November 2020
- J. Oglio, and B. Welch. “Development of the ITACA Network Loading Analysis Tool's Scheduling Techniques”, *NASA Technical Reports Server (NTRS).* June 2018.

EDUCATION

- Kent State University, PhD in Computer Science. May 2025. “Torus, Trail, and SmartShards Topological Approaches to Fortify Against Byzantine Faults.” *Diss. Kent State University*, 2025.
- Kent State University, master’s in computer science. May 2023.
- Kent State University, bachelor’s in applied mathematics. May 2020. "Partitionable Blockchain." *Electronic Thesis. Kent State University*, May 2020.

CONFERENCE PRESENTATION

- “TRAIL: Cross-Shard Validation for Byzantine Shard Protection." *International Symposium on Stabilizing, Safety, and Security of Distributed Systems (SSS),* October 2024
- "Consensus on an Unknown Torus with Dense Byzantine Faults" *International Conference on Networked Systems*, May 2023

PROGRAM REVIEWER

- 2025: BLOCKCHAIN, SSS
- 2024: BLOCKCHAIN, SSS
- 2023: SSS, BLOCKCHAIN, NETYS
- 2022: ICRA, SMC, COCOON, SODA, BLOCKCHAIN
- 2021: PODC, SPAA, DISC, SMC, ALGOSENSORS, COCOON, SSS
- 2020: ICDCN, ICRA, PODC, CCNC, SSS
- 2019: ICDCN, WALCOM, IROS, DISC, CCNC

NOTABLE ACHIEVEMENTS

- Best Student Paper Award at *NETYS* 2021
- Graduated with Honors from the Honors College at Kent State University
- Eagle Scout, Boy Scouts of America BSA
- Sergeant, Young Marines

TECHNICAL EXPERIENCE

- Languages: C++, JavaScript, Python, HTML, Matlab, C#
- Tools: Dune, Deepnote, Generative AI, Git, Node, SQL, Jupyter, Make, JQuery, Unreal, Unity, Gnuplot, TensorFlow, PyTorch, ASP.net