

CURRICULUM VITAE – Xingyu Dong

Personal Information

Preferred Name : Kevin

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✉ xdong1@usc.edu

📍 Kleokhov

Education

University of Southern California

Sept. 2026 - May 2031 (Exp.)

Ph.D. in Computer Science

Advisor : Harsha V. Madhyastha.

University of Pennsylvania

Sept. 2024 - May 2026

M.S.E. in Computer and Information Science

GPA : 4.00/4.00

Thesis : λ -CTRL : A Serverless Kubernetes Control Plane for High Elasticity and Near-Zero Cost. Advisor : Vincent Liu.

Swarthmore College

Sept. 2020 - May 2024

B.A. in Computer Science, Economics

GPA : 3.91/4.00

Publication

Xingyu Dong, Daniel Průša, Michael Wehar, Chen Xu (*alphabetical order*). **Demo : Drawing Algorithms As Modular Objects**. Proceedings of Workshop on Functional Art, Music, Modeling and Design (*FARM'26*), Indianapolis, IN, August 2026.

Abdelrahman Abdelmonsef, **Xingyu Dong**, Daniel Průša, Michael Wehar, Chen Xu (*alphabetical order*). **Finding Maximum and Minimum Size Matrices : The Algorithmic Complexity of Coding Challenges**. Proceedings of International Conference on Fun with Algorithms (*FUN'26*), Porquerolles, France, May 2026.

Research Experience

Networked Systems Lab, University of Southern California

Jun. 2026 - Present

Focus : Web Systems, Networked Systems.

Advisor : Harsha V. Madhyastha.

- Designing web systems that can speed up the agentic pipeline.

Distributed Systems Lab, University of Pennsylvania

Jan. 2025 - Present

Focus : Serverless Systems, Cloud Computing.

Advisor : Vincent Liu.

- Designing a fully serverless Kubernetes control plane using AWS Lambda that scales for bursty scheduling and incurs near-zero idle cost, achieving comparable pod-scheduling throughput to traditional stateful clusters at significantly lower cost.

Systems Research Group, Brown University

May 2025 - Aug. 2025

Focus : Network Measurement, Congestion Control.

Advisors : Akshay Narayan, Deepti Raghavan, Aurojit Panda.

- Developed a program analysis pipeline to trace kernel control-path executions (e.g., scheduler, TCP congestion control) using eBPF, perf, and Intel PT, attributing application behaviors to specific controllers over time.

Swarthmore College

Nov. 2022 - May 2024

Focus : Computer Graphics, Pattern Matching.

Advisor : Michael Wehar.

- Developed two-dimensional matrix pattern-matching algorithms that gained significant

runtime improvements on four-corners detection, bounded-sum square checks, and axis-aligned-rectangle detection, and applied them in creating computational artworks.

Work Experience

National Center for Supercomputing Applications

Jun. 2024 - Aug. 2024

Cyberinfrastructure Research Intern

- Implemented a resource catalog for ACCESS Operation using React/Django, enabling HPC providers to organize existing infrastructure and submit allocation requests.
- Integrated Retrieval-Augmented Generation (RAG) for Clowder v2 data management system using FastAPI and Qdrant to support dataset-specific question answering.

Talk & Presentation

Swarthmore College Senior Project Showcase

Apr. 2024

Consortium for Computing Sciences in Colleges Northeast Region (*CCSCNE*)

Apr. 2023

Fellowships & Awards

Annenberg Fellowship

2026

ACCESS-CI STEP Award

2024

Swarthmore Research Fellowship

2022, 2023

Teaching & Mentorship

University of Pennsylvania

Teaching Assistant

- CIS 5550. Internet and Web Systems (Fall 2025, Spring 2026) ; CIS 4000/4010. Senior Design (Fall 2025, Spring 2026) ; CIS 5690. GPU Computing for Machine Learning Systems (Fall 2024, Spring 2025)

Swarthmore College

Teaching Assistant

- CPSC 071. Software Engineering (Fall 2023) ; CPSC 035. Data Structures and Algorithms (Fall 2022, Spring 2023)

Skill

Languages. Go, C++/C, Java, Python, HTML/CSS/JavaScript, PHP, R, Stata

Frameworks. AWS, CUDA, OpenMPI, vLLMs, OpenCV, TensorFlow, PyTorch, Kubernetes, Spark, Airflow, Valgrind, eBPF, perf, Intel-PT, ns-3, MySQL, PostgreSQL, MongoDB

Misc. $\text{\LaTeX}$, Git, React, jQuery, FastAPI, Nginx, Django, Flask, SpringBoot, NodeJS