Supawit Chockchowwat

Thomas M. Siebel Center, Rm 2119
201 N. Goodwin Ave.
Urbana, IL 61801

Email: supawit2@illinois.edu
Phone: (267) 694-2530

RESEARCH	**Data Management; Data Mining; Machine Learning; Distributed Systems**	
EDUCATION	**Ph.D., Computer Science** University of Illinois Urbana-Champaign Advisor: Yongjoo Park Committee: Yongjoo Park, Hari Sundaram, Indranil Gupta, Fatma Özcan	Aug 2020 – May 2025 (Expected)
	B.S., Computer Science University of Texas at Austin Turing Scholars Honors Computational Science and Engineering Certificate	Aug 2016 – May 2020
PROFESSIONAL EXPERIENCE	**Research Assistant** University of Illinois at Urbana-Champaign	Aug 2020 – Present
	Software Engineer Intern Google LLC Database Efficiency, Technical Infrastructure	May – Aug 2024
	Software Engineer Intern Google LLC AlloyDB, GCP Databases	May – Aug 2023
	Software Engineer Intern Google LLC Data Pipeline, GCP Data Analytics	May – Aug 2022
	Project Manager, Research Assistant University of Illinois at Urbana-Champaign Airphant, CreateLab	May – Aug 2021
	Backend Engineer Intern Robinhood Markets, Inc. Spending, Cash Area	May – Aug 2020
	Infrastructure Engineer Intern Facebook, Inc. Location-Aware Distribution (LAD), Core System	Jun – Aug 2019
	Software Engineer Intern Uber Technologies, Inc. Business Intelligence (BI), Data Platform	May – Aug 2018
MEMBERSHIPS	**CreateLab, DAIS** Advised by Yongjoo Park.	Aug 2020 – Present

Center for Computational Visualization (CVC)   Jan 2018 – May 2020
Advised by Chandrajit L. Bajaj.

Personal Autonomous Robotics Lab (PeARL)   Aug 2018 – May 2019
Advised by Scott Niekum and Caleb C. Chuck.

Neural Networks Research Group (NNRG)   Oct 2016 – May 2018
Advised by Cem C. Tutum.

CURRENT
PROJECTS

Transactional Python
• Augment Python with DBMS for durability, atomicity, replicability, and time-versioning.

Adaptive Database Physical Design: Indexes and Layouts
• Develop learned index to surpass traditional indexes by exploiting patterns in key-value storage.
• Formulate and design optimizers to adapt towards memory hierarchy and data patterns.

Separation of Compute and Storage in Information Retrieval
• Leverage cloud infrastructure to build search engines with extreme elasticity.

Deep Online Aggregation
• Design a model to predict online aggregation with deeply nested query.

TEACHING

Advanced Data Management (CS 511)
Teaching Assistant, University of Illinois at Urbana-Champaign, Fall 2023

Data Structures (CS 225)
Teaching Assistant, University of Illinois at Urbana-Champaign, Spring 2022
• Guide three lab sections, advise nine projects, and hold office hours.

AWARDS

Honorable Mention, SIGMOD 2023 Best Artifact   June 2024

Conference Presentation Awards for Graduate Students, Graduate College   May 2024
University of Illinois at Urbana-Champaign

Conference Presentation Awards for Graduate Students, Graduate College   May 2022
University of Illinois at Urbana-Champaign

Selected Student Attendee, 2020 The Cornell, Maryland, Max Planck   Aug 2020
Pre-doctoral Research School 2020

Research Distinction, College of Natural Sciences   Apr 2020

Honorable Mention, 2019/20 CRA Undergraduate Research Award   Dec 2019

Research Distinction, College of Natural Sciences   Apr 2019
The University of Texas at Austin

28th (21st Tie, 3rd North America), 2019 ACM ICPC World Finals   Apr 2019
With Ethan Arnold and Ryan Rice

First Place, 2019 ACM ICPC South Central USA Regional Contest   Nov 2018

Marjorie Morales Award for Excellence in Computer Science and   Apr 2018
Computer Engineering, 2018 Undergraduate Research Forum

109th (56th Tie), 2017 ACM ICPC World Finals With Brian Richer and Alex Meed		May 2017
First Place, 2017 ACM ICPC South Central USA Regional Contest		Oct 2016
First Place & Best Code Implementation, 2016 IEEE RAS Robotathon		Nov 2016
First Place Gold Medal, 2014 Thailand Olympiad in Informatics		May 2014

FELLOWSHIPS	**Graduate College CS PhD Fellowship**	Oct 2023 – May 2024
	Thai Scholars '58, IOI Olympic Scholarships	Jul 2015 – Present
	Freshman Research Initiative Fellowship	May – Aug 2017

PUBLICATIONS

1. Zhaoheng Li, **Supawit Chockchowwat**, Hanxi Fang, Ribhav Sahu, Sumay Thakurdesai, Kantanat Pridaphatrakun, Yongjoo Park
   Demonstration of ElasticNotebook: Migrating Live Computational Notebook States (Demo Paper)
   Companion of SIGMOD'24: ACM Special Interest Group on Management of Data, Santiago, Chile, June 2024.

2. **Supawit Chockchowwat**, Wenjie Liu, Yongjoo Park
   AirIndex: Versatile Index Tuning Through Data and Storage
   SIGMOD'24: ACM Special Interest Group on Management of Data, Santiago, Chile, June 2024.

3. Nikhil Sheoran*, **Supawit Chockchowwat***, Arav Chheda, Suwen Wang, Riya Verma, Yongjoo Park
   A Step Toward Deep Online Aggregation
   SIGMOD'23: ACM Special Interest Group on Management of Data, Seattle, USA, June 2023.
   Honorable Mention, SIGMOD 2023 Best Artifact
   * Equally contributed.

4. **Supawit Chockchowwat**, Zhaoheng Li, Yongjoo Park
   Transactional Python for Durable Machine Learning: Vision, Challenges, and Feasibility (Short Paper)
   DEEM at SIGMOD'23: 7th Workshop on Data Management for End-to-End Machine Learning, Seattle, USA, June 2023.

5. **Supawit Chockchowwat**, Yongjoo Park
   Automatically Finding Optimal Index Structure (Extended Abstract)
   AIDB at VLDB'22: 4th International Workshop on Applied AI for Database Systems and Applications, Sydney, Australia, September 2022.

6. **Supawit Chockchowwat**
   Tuning Hierarchical Learned Indexes on Disk and Beyond (Abstract)
   SIGMOD SRC'22: ACM Special Interest Group on Management of Data Student Research Competition, Philadelphia, USA, June 2022.

7. **Supawit Chockchowwat**, Chaitanya Sood, Yongjoo Park
   Airphant: Cloud-oriented Document Indexing
   ICDE'22: 38th International Conference on Data Engineering, Kuala Lumpur, Malaysia, May 2022.

8. Caleb C. Chuck, **Supawit Chockchowwat**, Scott Niekum
   Hypothesis Driven Exploration for Deep Reinforcement Learning
   IROS'20: International Conference on Intelligent Robots and Systems, Las Vegas, USA, October 2020.

9. Cem C. Tutum, **Supawit Chockchowwat**, Etienne Vouga, Risto Miikkulainen
   Functional Generative Design: An Evolutionary Approach to 3D-Printing
   GECCO'18: Genetic and Evolutionary Computation Conference, Kyoto, Japan, July 2018.

UNDER REVIEWS

1. **Supawit Chockchowwat**, Sumay Thakurdesai, Zhaoheng Li, Matthew S. Krafczyk, Yongjoo Park
   Chipmink: Partial Object Store for Temporal Exploration on Notebooks

2. Zhaoheng Li, **Supawit Chockchowwat**, Ribhav Sahu, Areet Sheth, Yongjoo Park
   Kishu: Time-Traveling for Computational Notebooks

TECHNICAL REPORTS

1. **Supawit Chockchowwat**, Chandrajit L. Bajaj
   Probabilistic PolarGMM: Unsupervised Cluster Learning of Very Noisy Projection Images of Unknown Pose
   arXiv:2206.12959, June 2022.

2. Jiaxin Wu, **Supawit Chockchowwat**
   Step Out of Your Comfort Zone: More Inclusive Content Recommendation for Networked Systems
   arXiv:2106.10408, June 2021.

TALKS		
	SIGMOD, Santiago, Chile	Jun 2024
	DEEM at SIGMOD, Seattle, USA	Jun 2023
	AIDB at VLDB, Sydney, Australia (Virtual)	Sep 2022
	SIGMOD SRC, Philadelphia, USA (Virtual)	Jun 2022
	ICDE, Kuala Lumpur, Malaysia (Virtual)	May 2022

SERVICES	
	Reviewer, IEEE Transactions on Knowledge and Data Engineering (TKDE), 2024
	Reviewer, ACM SIGMOD Availability & Reproducibility Initiative (ARI), out-of-cycle 2023
	Reviewer, ACM SIGMOD Availability & Reproducibility Initiative (ARI) 2023
	Reviewer, Machine Learning and Systems (MLSys) Artifact Evaluations 2023