

Supawit Chockchowwat

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RESEARCH	Data Management; Data Mining; Machine Learning; Distributed Systems	
EDUCATION	Ph.D., Computer Science University of Illinois Urbana-Champaign Advisor: Yongjoo Park	Aug 2020 – Present
	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 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) Advised by Chandrajit L. Bajaj.	Jan 2018 – May 2020

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, Spring 2022

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

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

Selected Student Attendee, 2020 The Cornell, Maryland, Max Planck
Pre-doctoral Research School 2020 Aug 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
The University of Texas at Austin Apr 2019

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

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

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

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 – Present
	Thai Scholars '58, IOI Olympic Scholarships	Jul 2015 – Present
	Freshman Research Initiative Fellowship	May – Aug 2017

PUBLICATIONS

1. **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.
2. 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.
** Equally contributed.*
3. **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.
4. **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.
5. **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.
6. **Supawit Chockchowwat**, Chaitanya Sood, Yongjoo Park
Airphant: Cloud-oriented Document Indexing
ICDE'22: 38th International Conference on Data Engineering, Kuala Lumpur, Malaysia, May 2022.
7. 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.
8. 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.

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	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, ACM SIGMOD Availability & Reproducibility Initiative (ARI) 2023	
	Reviewer, Machine Learning and Systems (MLSys) Artifact Evaluations 2023	