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TYLER ESTRO

I am a Ph.D. Candidate in Computer Science at Stony Brook University (SBU) with Professor Erez Zadok as my advisor, a Research Assistant at the File Systems and Storage Lab, and a member of SBU's Institute for AI-Driven Discovery and Innovation. The primary focus of my research has been the efficient exploration and optimization of multi-tier storage caching systems, but I have also published in other areas such as performance modeling, visualization, and even artificial intelligence in the life sciences domain. I have a growing interest in disaggregated memory systems and the latest Compute Express Link (CXL) technology.

SKILLS

- **Programming Languages**

  Bash, C, C++, Python (5+ years)
- **Software**

  FIO, OpenCAS, Pandas & Polars, PyMimircache, QEMU

EDUCATION

- **Ph.D. in Computer Science. Stony Brook University, NY (May 2018 – Current)**

  Analysis of Algorithms, Computer Architecture, Compiler Design, Discrete Mathematics, Fundamentals of Data Science, Operating Systems, Logic in Computer Science, Systems Security, Theory of Computation.
- **B.S. in Software Technology. Farmingdale State College, NY (May 2015)**
- **A.S. in Business Administration. Suffolk County Community College, NY (May 2008)**

TEACHING EXPERIENCE

- **File Systems and Storage Lab, Stony Brook University, NY (May 2018 – Current)**

  Every semester I have advised and mentored 1-5 graduate or undergraduate students from our lab or external institutions that are interested in independent research or for their program's capstone project course.
- **Graduate Teaching Assistant, Stony Brook University, NY (2017 - 2019)**

  CSE 219: Computer Science III, CSE 506: Operating Systems, CSE 564: Visualization, XSEDE HPC Workshop: Big Data

WORK EXPERIENCE

- **File Systems and Storage Lab, Stony Brook University, NY**

  Research Assistant, May 2018 – Present

  My main research topics are the efficient exploration and optimization of multi-tier storage caching systems, as well as disaggregated memory and CXL technology.
- **Institute for Advanced Computational Science, Stony Brook University, NY**

  High Performance Computing Assistant, Aug 2017 – May 2018

  Provided technical support to users in areas such as parallelizing serial applications, modularizing environment configurations, software package installation and maintenance, debugging code, and education on HPC topics.
- **Lake Grove Diner, NY**

  Waiter, 2012 – 2017
- **Various Service Industry Jobs, 2006 – 2012**

PUBLICATIONS

- **Accelerating multi-tier storage cache simulations using knee detection**

  Tyler Estro, Mario Antunes, Pranav Bhandari, Anshul Gandhi, Geoff Kuenning, Yifei Liu, Carl Waldspurger, Avani Wildani, Erez Zadok

  Performance Evaluation Journal, (PEVA ‘24), February 2024
- **Persistent Memory Research in the Post-Optane Era**

  Peter Desnoyers, Ian Adams, **Tyler Estro**, Anshul Gandhi, Geoff Kuenning, Mike Mesnier, Carl Waldspurger, Avani Wildani, Erez Zadok

  Proceedings of the 1st Workshop on Disruptive Memory System (DIMES ‘23), October 2023
- **PC-Expo: A Metrics-Based Interactive Axes Reordering Method for Parallel Coordinate Displays**

  Anjul Tyagi, **Tyler Estro**, Geoff Kuenning, Erez Zadok, Klaus Mueller

  IEEE Conference on Visualization and Visual Analytics (VIS ‘22), October 2022
- **Social Sensors for Wildlife: Ecological Opportunities in the Era of Camera Ubiquity**

  Alex Borowicz, Heather Lynch, **Tyler Estro**, Catherine Foley, Bento Gonçalves, Katelyn Herman, Stephanie Adamczak, Ian Stirling, and Lesley Thorne

  Frontiers in Marine Science, May 2021
- **Analyzing the distribution fit for storage workload and Internet traffic traces**

  Muhammad Wajahat, Aditya Yele, **Tyler Estro**, Anshul Gandhi, and Erez Zadok

  Performance Evaluation Journal (PEVA ‘20), September 2020
- **Desperately Seeking ... Optimal Multi-Tier Cache Configurations**

  Tyler Estro, Pranav Bhandari, Avani Wildani, and Erez Zadok

12th USENIX Workshop on Hot Topics in Storage (HotStorage '20), July 2020

- **Distribution Fitting and Performance Modeling for Storage Traces**
  ****Won Best Paper Award!***
  Muhammad Wajahat, Aditya Yele, **Tyler Estro**, Anshul Gandhi, and Erez Zadok
  27th IEEE International Symposium on the Modeling, Analysis, and Simulation of Computer and Telecommunication Systems (MASCOTS '19), October 2019
- **ICE: Interactive Configuration Explorer for High Dimensional Categorical Parameter Spaces**
  Anjul Tyagi, Zhen Cao, **Tyler Estro**, Klaus Mueller, and Erez Zadok
  IEEE Conference on Visual Analytics Science and Technology (VAST '19), October 2019

POSTERS

- **Computer vision for the detection and segmentation of penguin colonies in satellite imagery**
  Tyler Estro, Hieu Le, Bento Goncalves, Brad Spitzbart, Dimitris Samaras, Heather J. Lynch
  Microsoft's AI for Good Summit, October 2019
- **Graphs Are Not Enough: Using Interactive Visual Analytics in Storage Research**
  Zhen Cao, **Tyler Estro**, Geoff Kuenning, Klaus Mueller, Anjul Tyagi, and Erez Zadok
  11th USENIX Workshop on Hot Topics in Storage (HotStorage '19), July 2019
- **Towards Better Understanding of Black-box Auto-Tuning: A Comparative Analysis for Storage Systems**
  Zhen Cao, **Tyler Estro**, Vasily Tarasov, Sachin Tiwari, Erez Zadok
  2018 USENIX Annual Technical Conference (ATC '18), July 2018

PEER REVIEWS

- **ACM Transactions on Storage (TOS), 2024**

AWARDS

- **Computer Science, Engineering, and Mathematics Scholarship (CSEMS), 2012**
  Advised by Professor Ben Chen.
- **Battle of the Brains Programming Competition, 2012**
  First place for designing an educational GUI application to assist chemistry students.

CITIZENSHIP & LANGUAGE

- Born United States Citizen and lifelong New York State Resident.
- Native English speaker. Beginner Japanese (actively learning).