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Education

- **Doctor of Philosophy in Computer Science** - University of Central Florida - *May 2024*
  - **Major Advisors:** Dr. Mark Heinrich and Dr. Yan Solihin.
  - **Dissertation:** The Crash Consistency, Performance, and Security of Persistent Memory Objects. (https://stars.library.ucf.edu/etd2023/147/)
- **Master of Science in Computer Science** - University of Central Florida - *May 2019*
  - **Focus:** Compiler support for hybrid persistent memory systems.
- **Bachelor of Science in Computer Science** - University of Central Florida - *December 2016*

Publications

- Greenspan, Derrick, et. al. 'Persistent Memory Objects on the Cheap.' *Proceedings of the 39th ACM International Conference on Supercomputing.* June 2025. (https://doi.org/10.1145/3721145.3734533)
- Greenspan, Derrick, et. al. 'LOaPP: Improving the performance of Persistent Memory Objects via Low-Overhead at-rest PMO Protection.' *The Proceedings of the IEEE International Symposium on Secure and Private Execution Environment Design.* May 2024. (https://doi.org/10.1109/SEED61283.2024.00023)
- Greenspan, Derrick, et. al. 'Improving the Security and Programmability of Persistent Memory Objects.' *The Proceedings of the IEEE International Symposium on Secure and Private Execution Environment Design.* 2022. (https://doi.org/10.1109/SEED55351.2022.00021)
- Greenspan, Derrick. 'LLAMA-automatic memory allocations: an LLVM pass and library for automatically determining memory allocations.' *The Proceedings of the International Symposium on Memory Systems.* 2019. (https://doi.org/10.1145/3357526.3357534)

Experience

- **Post-Doctoral Fellow**: University of Central Florida, CompARCH Lab. P3 scholar (Preeminent Postdoctoral Program).

  May 2024 - Present Day: Postdoctoral Fellow
  - Funded through University of Central Florida's Preeminent Postdoctoral Program (P3), targeting outstanding scholars who are beginning their postdoctoral training.
  - Researched Non-Volatile Memory Express (NVMe) and Compute Express Link (CXL) devices and their design and implementation with Persistent Memory Objects (PMOs) as well as novel abstractions for CXL devices.
  - Supervised by Dr. Jongkuk Choi (Purdue University 2022).
- **Graduate Research Assistant**: University of Central Florida, ARPERS (Architecture Research for PErformance, Reliability, and Security).

  November 2020 - May 2024: Graduate Research Assistant
  - Performed graduate research on Persistent Memory Objects (PMOs), funded through an Office of Naval Research (ONR) grant.
  - Designed, implemented, and evaluated the performance and security of PMOs with different encryption schemes by modifying the Linux kernel.

  - ARPERS lab is supervised under the direction of Dr. Yan Solihin (CS PhD, University of Illinois 2002).
  - The PMO project was co-advised under Dr. Mark Heinrich (EE PhD, Stanford University 1999).
  - Sponsored and supervised four undergraduate senior design members from January-July 2023; successfully assisting them in porting programs to use PMOs.

- **Research Assistant**: University of Central Florida: Institute for Simulation and Training (IST): Advanced Research Computing Center (ARCC).

  January 2017 - October 2020: Graduate Research Assistant

  May 2016 - December 2016: Undergraduate Research Assistant

  - Responsible for providing consulting and technical services to help users of ARCC resources, including helping orient new users to the system, helping users resolve queuing and submission errors, and helping with application and library builds to support software on the system.
  - The ARCC houses high performance computing (HPC) resources for use in research by faculty (and their students) across the University of Central Florida.
  - Was directed by Dr. Paul Wiegand (CS PhD, George Mason University 2004) and Dr. Glenn Martin (M&S PhD, University of Central Florida 2012).

- **Technical Support for TeachLivE**: University of Central Florida: Synthetic Reality Laboratory (SREAL) and the College of Education and Human Performance.

  August 2012 - May 2016

  - Provided technical support for a virtual classroom environment for aspiring teachers.
  - TeachLiVE later became the basis of the Mursion Virtual Reality Training Simulation Software platform, a virtual reality environment designed to allow professionals to train and master complex interpersonal skills.
  - Mentored by Dr. Charles Hughes (CS PhD, Pennsylvania State University 1970), Dr. Lisa Dieker (Ed PhD, University of Illinois 1994), Dr. Kate Ingraham (Ed PhD, University of Central Florida 2014), and Dr. Aleshia Hayes (M&S PhD, University of Central Florida 2015).

Research Interests

- **General**: *Operating Systems and their Design, Computer Architecture, Memory Hierarchies, Theory of Computation*
- **Specific**: *Hybrid Memory Systems, DRAM Memory Alternatives, Non-Volatile Memory Systems, Linux, Low-Level Hardware/Software Interface*