





Ben Limpanukorn

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Education



- 2022 – Present  **Ph.D., University of California, Los Angeles (UCLA)** Computer Science
- 2021 – 2022  **M.S., University of California, Los Angeles (UCLA)** in Computer Science.
Capstone: *Challenges and Methods for Testing NVMe SSD Devices using Software Fuzzing Techniques.*
- 2017 – 2021  **B.S., University of California, Los Angeles (UCLA)** in Computer Science and Engineering.

Publications



Conference Proceedings

- 1 J. Clifford, **B. Limpanukorn**, and E. Jimenez, “An improved process to colorize visualizations of noisy x-ray hyperspectral computed tomography scans of similar materials,” 2022.  URL: <https://api.semanticscholar.org/CorpusID:265029352>.
- 2 J. Clifford, E. Kemp, **B. Limpanukorn**, and E. S. Jimenez, “A process to colorize and assess visualizations of noisy x-ray computed tomography hyperspectral data of materials with similar spectral signatures,” 2021, pp. 1–8.  URL: <https://api.semanticscholar.org/CorpusID:252166322>.



Experience

- 2020 – Present  **Graduate Student Researcher** SEAL Lab at UCLA.
- Currently investigating methods to effectively fuzz test compilers by mutating inputs to satisfy automatically inferred constraints.
 - Evaluated the potential uses and limitations of software fuzzing techniques for testing NVMe SSDs.
-  **R&D Graduate Student Intern** Sandia National Laboratories.
- Currently part of a team leading the development of new airport security screening workflows to improve threat detection, preserve passenger privacy, and reduce passenger wait time.
 - Productionized object detection models for next-generation millimeter-wave scanners, resulting in a 6x reduction in inference time and improved precision/recall compared to a baseline model.
 - Developed new methods to colorize/visualize hyperspectral CT data by combining dimension reduction (e.g. UMAP and T-SNE) with generalized linear models to improve the interpretability of spectrally similar materials.
 - Used Vitis HLS to develop an FPGA implementation of a List-Mode MLEM reconstruction algorithm, achieving a 5x speed-up compared to an equivalent CPU implementation.

Experience (continued)

- 2019 – 2020  **DevOps Engineer** Camino Financial
- Created a CI/CD pipeline that increased the deployment rate by 25%.
 - Refactored loan system architecture to enable zero-downtime deployments.
 - Built a ChatOps solution to streamline and monitor deployments to staging and production environments.
 - Introduced changes to the development workflow that reduced unnecessary overhead.
- 2018 – 2019  **Research Assistant** LEMUR Lab at UCLA
- Extended (Simulation Environment for Cooperative Localization) CoLo Project to incorporate signal strength and communication cost in its analysis and automated data collection for running physical experiments, greatly reducing setup time.

Skills

- Languages  Python, C, C++, \LaTeX , Bash, Fish
- Libraries/Frameworks  PyTorch, Tensorflow, NumPy, Matplotlib, Pandas