Seongbin Park (she/her/hers)

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EDUCATION

University of California, Los Angeles **Los Angeles, CA**
Ph.D. Candidate in Electrical and Computer Engineering *Expected June 2030*
    Advisor: Nader Sehatbaksh
    Eugene V. Cota-Robles Fellowship Award Recipient

B.S. Computer Science *March 2024*
    Levi James Knight Jr. Scholarship Recipient

RESEARCH EXPERIENCE

Secure Systems and Architectures Lab **Los Angeles, CA**
Undergraduate/Graduate Researcher September 2023 – Present
- Examined techniques for privacy preservation in vision and text applications involving object detection, segmentation, inpainting, private attribute masking, and text anonymization
- Researched image-to-image translation GANs to reverse-engineer screen recapture and bypass provenance verification by signing synthetic images as authentic (P1)
- Investigated methods to enhance performance of diffusion models for adversarial purification, including the implementation of denoising diffusion GANs to accelerate inference (P2, P3)

MINT Laboratory **Los Angeles, CA**
Undergraduate Researcher October 2022 – August 2023
- Added methods to ingest and prepare various climate data sources (CMIP, ERA) for model training to climate-learn, a PyTorch based open source machine learning package for statistical downscaling and temporal forecasting methods
- Fine-tuned a large pre-trained model (ClimaX) for precipitation prediction by rewriting data loaders to leverage different data sources; improved accuracy by 15% over benchmark data sets
- Implemented data augmentation techniques including cutmix, augmix, and mixup to improve model robustness of computer vision-based weather forecasting models

PROFESSIONAL EXPERIENCE

Keysight Technologies **Colorado Springs, CO**
Software Engineering Intern June 2023 – September 2023
- Developed a dockerized, cloud-based web application using Django, Django REST Framework, and Oracle/PostgreSQL databases to enable executives to track and analyze records for ~15,000 employees
- Implemented additional security measures including nginx as a reverse proxy, SAML-based single sign-on, and CSRF tokens to protect against common web vulnerabilities
- Extracted, cleaned, and stored relevant product and customer data from Snowflake database into AWS S3 to write a recommendation API for Keysight's e-commerce platform
- Researched and presented recommendation system design, machine learning models (kNN, matrix factorization, graph based etc.), and prototype to senior leadership team for review

Poppin **Los Angeles, CA**
Web Developer June 2023 – September 2023
- Developed the frontend of a progressive web application utilizing React.js (HTML5, CSS3, JavaScript) to showcase, manipulate, and retrieve data from a document store database
- Built the necessary backend infrastructure for a MVP utilizing Node.js and firebase functions
- Integrated the Google Maps and Stripe API (Javascript and Python SDK) across both the frontend and backend and updated the database based on webhook events

PUBLICATIONS

P1. **S. Park**, A. Vilesov, J. Zhang, H. Khalili, Y. Tian, A. Kadambi, N. Sehatbakhsh (2025). Chimera: Creating Digitally Signed Fake Photos by Fooling Image Recapture and Deepfake Detectors. 34th Usenix Security Symposium.

P2. H. Khalili, **S. Park**, V. Bollapragada, & N. Sehatbakhsh (2025). SuperPure: Robust and Efficient Purification of Localized and Distributed Adversarial Patches via Super-Resolution GAN Models - Under review

P3. H. Khalili, **S. Park**, V. Li, B. Bright, A. Payani, R. Kompella, & N. Sehatbakhsh (2024). LightPure: Realtime Adversarial Image Purification for Mobile Devices Using Diffusion Models. The 30th Annual International Conference on Mobile Computing and Networking.