SELIM EMIR CAN

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EDUCATION

MS in Electrical Engineering — Stanford University September 2025 - Present
Cumulative GPA: 4.00/4.00
Selected Coursework: Robot Perception(A), AI-Assisted Healthcare(A)

BS in Electrical Engineering — University of California, Los Angeles September 2020 - June 2024
Cumulative GPA: 3.92/4.00 (*cum laude*), Major GPA: 3.98/4.00
Selected Coursework: Computer Vision(A+), Machine Learning(A), Probability and Statistics(A+), Photonics(A+), Applied Numerical Computing(A), Signal Processing(A), Neural Signal Processing(A), Circuit Theory(A+)

RESEARCH INTERESTS

My research interests lie in **computational imaging** and **computer vision**. I want to explore its applications in remote sensing, robotics, AR/VR technology, and healthcare. My current research focuses on accurate physics modeling in the context of simulation ready garments. Previously, I worked on improving neural networks through uncertainty quantification and virtual staining of unlabeled tissue images via deep learning.

PUBLICATIONS

Image2Garment: Simulation-ready Garments from a Single Image Under review
• **Selim E. Can**, J.A., K.N., R.L., T.W., Y.Z., H.B., M.C., T.B., G. Wetzstein Website

PREPRINTS

SteadyDepth: Fast Stable Uncertainty-driven Monocular Video Depth Estimation
• P. Chari, **Selim E. Can**, A. Vilesov, H. Chen, N. Srivastava, A. Kadambi

Thermal Imaging and Radar for Remote Sleep Monitoring of Breathing and Apnea
• K. Del Regno, A. Vilesov, A. Armouti, A.B. Harish, **Selim E. Can**, A. Kita, A. Kadambi Paper|Code

PRESENTATIONS AND PATENTS

Image2Garment: Simulation-ready Garments from a Single Image December 2025
• **Selim E. Can** *Stanford Center for Image System Engineering Affiliates Meeting Poster Presentation*

Thermal Imaging and Radar for Remote Sleep Monitoring of Breathing and Apnea February 2025
• **Selim E. Can**, Alexander Vilesov *8th Annual UCLA Sleep Medicine Day - Frisca Yan-Go Lectureship*

Blending Camera and 77 GHz Radar Sensing for Equitable, Robust Plethysmography October 2023
• **Selim E. Can**, Jim Solomon, Achuta Kadambi *Amazon-UCLA Science Hub Fall Showcase in Luskin*

Enabling Diverse Eye Anatomy Tracking September 2023
• **Selim E. Can** *UCLA Summer Undergraduate Research Program Poster Symposium*

Enabling Diverse Eye Anatomy Tracking September 2023
• **Selim E. Can** *UCLA Summer Programs for Undergraduate Research (SPUR) Research Showcase*

Methods and Apparatus to Detect and Classify Forms of Sleep Apnea (UCLA Case no. 2024-253-1)
Filed May 29th, 2024
• K. Del Regno, A. Vilesov, A. Armouti, A.B. Harish, **Selim E. Can**, A. Kita, A. Kadambi

RESEARCH EXPERIENCE

Stanford Computational Imaging Lab July 2025 - Present
Graduate Research Assistant *Stanford, CA*

- Proposed a method to generate *simulation-ready garments* from a *single image* by first estimating fabric attributes and then predicting physics parameters based on these estimates.
- Curated the Fabric Attributes from Garment Tags dataset (16k garment images with fabric attributes) and the Tag-to-Physics dataset (1.3k fabrics with physics parameters governing mechanical behavior).
- Achieved state-of-the-art garment reconstruction on 4D-Dress (27.8 Chamfer Distance, 48.7% IoU) while being orders of magnitude faster than baselines, and obtained 71–86% fabric-attribute prediction accuracy from images, surpassing GPT-4.1V.

Ozcan Research Lab August 2024 – February 2025
Undergraduate Research Assistant *Los Angeles, CA*

- Designed a cross-modal registration pipeline for large confocal autofluorescence microscopy volumes, combining multi-scale affine alignment, multi-resolution iterative elastic registration, and thin-plate-spline refinement. Registered a dataset of 12 unlabeled thick cardiac tissue volumes and their cleared & stained counterparts (∼15 GB each).
- Developed ClariDi, a framework that fine-tunes a VQGAN on cleared & stained images and trains a latent Brownian Bridge Diffusion Model to generate high-quality virtually cleared & stained images from unlabeled thick tissue images.
- Extended ClariDi to virtually stain brightfield microscopy images to their corresponding H&E-stained images.

Visual Machines Group October 2022 - March 2025
Undergraduate Research Assistant *Los Angeles, CA*

- Proposed an uncertainty-aware formulation for fast video depth estimation (VDE), utilizing a lightweight adapter and uncertainty-aware temporal aggregation. Improved temporal consistency (OPW) of Depth Anything by at least 36% on both NYUDv2 and KITTI datasets. Achieved SoTA OPW compared to existing VDE models.
- Proposed an anomaly detection algorithm using signal processing techniques for real-time non-contact sleep apnea detection via radar sensing and thermal imaging. Achieved 99% accuracy, 74% recall, and 68% precision on 21 hours of data.
- Implemented a compositional image generation framework that manipulates cross-attention layers in diffusion models, utilizing positional embeddings to enhance spatial relationships and object-specific attributes.
- Developed a fusion-based eye-tracking algorithm with 0.86° gaze accuracy (baseline: 2.00°) and a data synchronization codebase for Virtual Reality headsets.
- Independently built a procedural, anatomically accurate eye/skin model based on clinical research parameters for synthetic eye-tracking data generation.
- Applied adaptive filtering to reduce the effect of motion artifact in pulse oximeter blood-oxygen saturation measurements. Designed and 3D printed a pulse-oximetery hardware.

Robotics and Mechanisms Laboratory (RoMeLa) March 2022 - October 2022
YORI Team (Cooking Robot Project) *Los Angeles, CA*

- Designed and 3D-printed a modular gas sensor shell that stores a Raspberry Pi Zero 2W and 17 gas sensors to identify chemical signatures (volatile organic compounds, temperature, humidity) humans perceive as "smells".

SKILLS

Mechanical	CAD (Solidworks, Fusion 360), 3-D Printing
Software	Python (PyTorch, Tensorflow), MATLAB, C/C++, Git, Blender, UnityVR
Electrical	PCB Design, Soldering & Wiring, Microcontrollers

AWARDS AND HONORS

UCLA Summer Undergraduate Research Program Stipend ∼ 7000$	2023
UCLA Harley L. Wood Family Scholarship ∼ 7000$	2023
UCLA Dean's Honor List for superior academic achievement	2024, 2023, 2022, 2021
Clifton and Priscilla Smith Scholarship (New York) ∼ 3000$	2020
Parent Teacher Student Association Scholarship (New York) ∼ 500$	2020

WORK EXPERIENCE

Corning Inc. August 2019 - October 2019
Summer Research Intern *Painted-Post, NY*

- Fused different variants of composite material (SiC, Zr, NaOH) to make new cement plug compositions. Tested the strength of composite materials (ceramic pellets).
- Analyzed the microstructure of cement plugs using a scanning electron microscope (SEM), and performed strength tests on ceramic castings.
- Orally presented my findings to mentors from the Materials Science R&D Department to conclude my research and received a $500 award for the best research presentation.

EXTRA-CURRICULAR ACTIVITIES

Turkish Student Association @ Stanford - Member

- Helped organize a Stanford Turkish Student Association barbecue at Stanford's Raines Garden, assisting with logistics such as table setup and food transportation for 50+ attendees to foster community among both Turkish and non-Turkish students.

Eta Kappa Nu (HKN) @ UCLA - Historian (Executive Board)

- Provided free tutoring services and hosted exam review sessions for upper-division circuits courses.
- Reported and maintained a historical record of events and meetings to IEEE HKN HQ to secure funding.

Turkish Bruins @ UCLA - Member

- Organized a philanthropy concert in collaboration with Sigma Pi @ UCLA, raising $400 for Syria-Turkey earthquake relief following the February 6, 2023 earthquake.