SELIM EMIR CAN

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EDUCATION

M.S. in Electrical Engineering, Stanford University — September 2025 – Expected June 2027
GPA: 4.00/4.00
Selected Coursework: Computational Imaging, Robot Perception, AI-Assisted Healthcare, Deep Reinforcement Learning, Advanced Topics in Computer Vision and Biomedicine

B.S. in Electrical Engineering, University of California, Los Angeles — September 2020 – June 2024
GPA: 3.92/4.00 (*cum laude*), Major GPA: 3.98/4.00
Selected Coursework: Computer Vision, Machine Learning, Signal Processing, Neural Signal Processing, Photonics, Probability and Statistics, Applied Numerical Computing

PUBLICATIONS AND PREPRINTS

Image2Garment: Simulation-ready Garment Generation 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 — Paper|Website

ClariDi: virtual clearing and staining of label-free thick tissue using deep learning — Under Preparation
• **Selim E. Can**, M.J.F., N.K., B.C., H.M., B.J., H.K., L.A.B., A.N., A. Ozcan — Paper

SteadyDepth: Fast Stable Uncertainty-driven Monocular Video Depth Estimation — Manuscript, 2025
• P. Chari, **Selim E. Can**, A. Vilesov, H. Chen, N. Srivastava, A. Kadambi — Paper|Supp.

Thermal Imaging and Radar for Remote Sleep Monitoring of Breathing and Apnea — arXiv, 2024
• K. Del Regno, A. Vilesov, A. Armouti, A.B. Harish, **Selim E. Can**, A. Kita, A. Kadambi — Paper|Code

RESEARCH EXPERIENCE

Stanford Physical and Spatial AI Lab, Prof. Gordon Wetzstein — July 2025 – Present
Graduate Research Assistant — *Stanford, CA*

- Proposed a method to generate *simulation-ready garments* from a *single image* by estimating garment geometry and fabric attributes, then predicting physics parameters from these attributes, reducing Chamfer Distance by 67% and increasing IoU by 17% in simulation.
- Curated three datasets: FabriCue (16k garment images with fabric attributes), FabriPhys (1.3k fabrics with physics parameters), and Synthetic Motion Sequence (40 garments, 12 materials, 3 motion sequences).
- Combined garment detail cropping (Keypoint R-CNN, Grounding DINO, SAM) with LoRA-fine-tuned Qwen3.5-9B to predict material, structure, and fabric family, beating GPT by 13.1 percentage points in joint accuracy.

Apple Inc., ISP & Algorithms and Autofocus Teams — June 2026 – September 2026
AI/ML Research Intern — *Cupertino, CA*

- Designed a lightweight disparity estimation framework for autofocus in extremely low-light video, exploiting spatiotemporal dynamics to maintain accuracy under significantly darker conditions.
- Built a synthetic video data augmentation pipeline that expanded the training set 100×, improving robustness and reducing overfitting in dense disparity estimation.

Stanford Translational AI Lab, Prof. Ehsan Adeli — April 2026 – June 2026
Graduate Research Assistant — *Stanford, CA*

- Enabled visual question answering on 4D brain MRI by extending pretrained 2D vision-language models with a lightweight adapter using 4D positional encoding and alternating windowed spatial and temporal attention, avoiding costly full 4D self-attention.

Ozcan Research Lab, Prof. Aydogan Ozcan — August 2024 – February 2025
Undergraduate Research Assistant — *Los Angeles, CA*

- Developed ClariDi, which fine-tunes a VQGAN on cleared & stained images and trains a latent Brownian Bridge Diffusion Model to generate virtually cleared & stained images from unlabeled thick tissue; extended it to virtual H&E staining of brightfield microscopy images.

- Designed a cross-modal registration pipeline for large confocal autofluorescence volumes (multi-scale affine alignment, multi-resolution elastic registration, thin-plate-spline refinement), registering 12 unlabeled thick cardiac tissue volumes to their cleared & stained counterparts (∼15 GB each).

Visual Machines Group, Prof. Achuta Kadambi — October 2022 – March 2025
Undergraduate Research Assistant — *Los Angeles, CA*

- Proposed fast video depth estimation with a lightweight adapter and uncertainty-aware temporal aggregation, improving Depth Anything's temporal consistency (OPW) by at least 36% on NYUDv2 and KITTI, state-of-the-art among video depth models.
- Proposed a signal-processing anomaly detection algorithm for real-time, non-contact sleep apnea detection from radar and thermal imaging, achieving 74% recall and 68% precision (99% accuracy) on 21 hours of data.
- Developed a fusion-based eye-tracking algorithm for VR headsets with 0.86° gaze accuracy (baseline: 2.00°), and built a procedural, anatomically accurate eye and skin model for synthetic eye-tracking data.
- Implemented a compositional image generation framework that manipulates cross-attention layers in diffusion models, using positional embeddings to improve spatial relationships and object-specific attributes.

OTHER EXPERIENCE

UCLA RoMeLa, designed custom gas sensor hardware for the YORI cooking robot — March 2022 – October 2022
Corning Inc., Summer Research Intern, Materials Science R&D — August 2019 – October 2019

PRESENTATIONS AND PATENTS

Image2Garment: Simulation-ready Garments from a Single Image — December 2025
• **Selim E. Can** — *Stanford Center for Image Systems 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*
UCLA Summer Programs for Undergraduate Research Showcase

Methods and Apparatus to Detect and Classify Forms of Sleep Apnea — Patent filed May 29th, 2024
• K. Del Regno, A. Vilesov, A. Armouti, A.B. Harish, **Selim E. Can**, A. Kita, A. Kadambi

SKILLS

Software: Python (PyTorch, TensorFlow), MATLAB, C/C++, Git, Blender, Unity (VR), Cloth Simulators
Hardware: PCB design, microcontrollers, soldering & wiring, CAD (SolidWorks, Fusion 360), 3D printing

AWARDS AND HONORS

UCLA Summer Undergraduate Research Program Stipend (∼$7,000)	2023
UCLA Harley L. Wood Family Scholarship (∼$7,000)	2023
UCLA Dean's Honor List	2021, 2022, 2023, 2024
Clifton and Priscilla Smith Scholarship, New York (∼$3,000)	2020
Parent Teacher Student Association Scholarship, New York (∼$500)	2020

EXTRA-CURRICULAR ACTIVITIES

Turkish Student Association @ Stanford, Member: helped organize a community barbecue for 50+ attendees
Eta Kappa Nu (HKN) @ UCLA, Historian (Executive Board): free tutoring and exam reviews for upper-division circuits; kept event records for IEEE HKN HQ funding
Turkish Bruins @ UCLA, Member: co-organized a philanthropy concert with Sigma Pi raising $400 for 2023 Syria–Turkey earthquake relief