

# Asad Melibaev

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## Education

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UC Davis, B.S in Computer Engineering, Computer Graphics, GPA 3.77

*Expected June 2026*

## Skills

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C, C++, Python, Kotlin, React, Three.js, Blender-Python, PyTorch, NeRF, Unreal Engine 5, System design, Git, CAD

## Experience

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### Computer Vision Systems Lead Engineer Intern, UCPRC

*June 24 - Present*

- Leading the development of the new profilometer system for 3D road surface reconstruction in real-time
- Designed electronic schematic, belt systems, and frame layouts
- Consulted with senior engineers and onsite machinists to develop an optimized frame layout
- Programmed microcontroller to controller stepper drivers, induction sensors, and collect data from LiDAR
- Post Processed and parsed point cloud data using Python
- Generated and analyzed 3D point clouds to monitor changes in road surface degradation for Caltrans
- Improved surface degradation tracking precision from  $\pm 5\text{mm}$  accuracy to  $\pm 0.1\text{mm}$  submillimeter accuracy

### Student Fees Co-Chair, UC Davis Council on Student Affairs and Fees

*Oct'23 - Present*

- Lead discussions as Co-Chair of the COSAF council, overseeing \$112M in student fees
- Ensure transparency and accountability in the allocation of student fees across UC Davis
- Provide detailed feedback to the Vice Chancellor of Student Affairs
- Collaborate with 19 voting members, including undergraduate, graduate students, faculty, and staff, to oversee financial decisions
- Manage and support the distribution of funds for co-curricular student programs across campus

### VR/AR Developer Intern, UC Graduate School of Management

*Nov 23 - Jun' 24*

- Developed a VR-ready environment for E-Commerce research under Prof. Pantelis Loupos
- Created detailed 3D mesh models in Blender, optimizing for immersive VR scenes in Unreal Engine 5
- Designed a theoretical VR grocery store layout, comparing virtual and in-person shopping behaviors
- Focused on leveraging AR/VR technologies to explore future retail environments through real-time 3D generation and spatial understanding

## Selected Project

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### Text to 3D Mesh Generation Pipeline

- Developed an early-stage pipeline for generating and refining 3D meshes using Stable Diffusion, depth maps, and point clouds
- Utilized Torch and Transformers to convert images into depth maps for mesh generation
- Wrote a custom Python script in a Conda environment to automate the 3D mesh generation process
- Refined and reconstructed 3D models in Blender, improving the quality of output

## Awards

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Dean's Honor List 2022-2023 • Intel Merit-Based Scholarship Recipient • Singapore & Asian Schools Math Olympiad Gold Medal • Texas-Instruments 2nd place for fastest sound tracking algorithm