Abhinav Mahajan

abhinavm@andrew.cmu.edu | (412) 608-7868 | abhinav-mahajan10.github.io | linkedin.com/in/abhinav-mahajan10

EDUCATION

Carnegie Mellon University — **Pittsburgh, PA**
Master of Science in Computer Vision — *December 2026*

International Institute of Information Technology — **Bangalore, India**
(Dual Degree) Master and Bachelor of Technology in Electronics and Communication Engineering — *July 2025*
Dual specialization: Artificial Intelligence/Machine Learning and Network Communication
GPA: 3.63/4.00; Dean's Merit List; Teaching Assistant for courses Machine Learning (AI 511), Visual Recognition (AI 825)

PROFESSIONAL EXPERIENCE

Amazon — **Bangalore, India**
Applied Scientist Intern — *January 2025 - July 2025*

- Developed a novel exposure mitigation strategy and long sequential input context reduction technique in LLM's for extracting Customer-Interest Category propensity scores for bi-directional ranking for personalized AD targeting.
- Achieved 3 times greater recall in next-purchase interest category prediction with minimal precision drop; Currently in pre-production and ready for submission in ACM SIGMOD/PODS 2026 (Applied Track).

Adobe Research — **Bangalore, India**
Research Intern — *May 2024 - July 2024*

- Devised an automated pipeline inspired by design processes employed by professionals to enhance visual appeal of Graphic designs (Posters/Flyers) introducing seminal techniques in harmonizing image assets while retaining identity.
- Approved for patent (USPTO filing expected Sept 2026); Under Review at a prestigious Computer Vision conference.

Adobe Research — **Bangalore, India**
Research Intern — *May 2023 - August 2023*

- Engineered a self-supervised graphic design evaluation system to overcome annotation bias and crafted a novel refinement algorithm to optimize layout aesthetics via the learned scorer; System deployed in Adobe Express.
- Outperformed GPT-4o by 12% on design evaluation tasks despite being 600 times smaller; paper accepted in WACV 2025 (Round 1, 13% acceptance rate).

PUBLICATIONS

[1] **Abhinav Mahajan*,** Abhikhya Tripathi*, KJ Joseph et al. *Make-It-Pretty: Towards Generating Designs from its Components,* **Under Review**

[2] Sahil Goyal*, **Abhinav Mahajan***, KJ Joseph et al. *Design-o-meter: Towards Evaluating and Refining Graphic Designs,* **WACV 2025**

[3] Ali Abedi*, Tracey JF Colella*, Mark Bayley, Urvashy Gopaul, **Abhinav Mahajan**, Tarun Reddy et al. *AVA: AI-driven Virtual Rehabilitation Assistant,* **WCISVR 2023**

PROJECTS

Hierarchical Sentiment and Activity Analysis of Users — *August 2024 - October 2024*

- Awarded the MITACS Fellowship and interned at Tech University of Ontario, Canada. Curated and annotated a dataset using screenshot parsing and vision-language models to infer user activity from screen captures.

Pothole Detection and Severity Estimation — *December 2022 - January 2023*

- Won SDAIA Smartathon Hackathon among 1,000+ submissions by training a Mask R-CNN model to segment potholes from video data with 82% accuracy and 3D reconstruction of segmented potholes to assess severity.

Stroke Rehabilitation Agent — *May 2022 - December 2022*

- Collaborated with University of Toronto to build a video-to-animation script enabling clinician-prescribed exercises to be rendered to avatars; Website deployed allowing stroke patients to attend rehabilitation sessions virtually.
- Developed a novel cyclic interpolation algorithm to achieve jitter-free animations; Work accepted to WCISVR 2023.

SKILLS

Programming Languages: Advanced: Python; Basic: C++, C, Java
Libraries: Advanced**:** PyTorch, NumPy, Pandas, Huggingface Transformers, trl; Basic: Tensorflow