

Bimsara Pathiraja

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RESEARCH INTERESTS

Multi-Modal Generative Models, Image Editing, Image and Video Generation, Vision and Language Reasoning

PUBLICATIONS

RefEdit: A Benchmark and Method for Improving Instruction-based Image Editing Model on Referring Expressions. Bimsara Pathiraja, Maitreya Patel, Shivam Singh, Yezhou Yang, Chitta Baral. ICCV main conference, 2025. [\[paper\]](#)

Multiclass Confidence and Localization Calibration for Object Detection. Bimsara Pathiraja, Malitha Gunawardhana, Muhammad Haris Khan. CVPR main conference, 2023. [\[paper\]](#)

Investigating the Shortcomings of LLMs in Step-by-Step Legal Reasoning. Venkatesh Mishra*, Bimsara Pathiraja*, Mihir Parmar, Sat Chidananda, Jayanth Srinivasa, Gaowen Liu, Ali Payani, Chitta Baral. NAACL 2025 Findings.

Dual Caption Preference Optimization for Diffusion Model. Amir Seidi, Yiran Lawrence Luo, Agneet Chatterjee, Shanthak Hedge, Bimsara Pathiraja, Yezhou Yang, Chitta Baral. TMLR 2025. [\[paper\]](#)

ExpressivityArena: Can LLMs Express Information Implicitly? Joshua Tint, Som Sagar, Aditya Taparia, Kelly Raines, Bimsara Pathiraja, Caleb Liu, Ransalu Senanayake. NeurIPS Workshop on Behavioral ML, 2024. [\[paper\]](#)

Fairness in Autonomous Driving: Towards Understanding Confounding Factors in Object Detection under Challenging Weather. Bimsara Pathiraja, Caleb Liu, Ransalu Senanayake. CVPR DDADS Workshop. [\[paper\]](#)

Class-aware Attention for Multimodal Trajectory Prediction. Bimsara Pathiraja, Shehan Munasinghe, Malshan Ranawella, Maleesha De Silva, Ranga Rodrigo, Peshala Jayasekara. [\[paper\]](#)

EXPERIENCE

Amazon.com Inc

Applied Scientist Intern

- Improving object detection, tracking, image and video based

VA, USA

May 2025 – August 2025

Arizona State University

Graduate Teaching Assistant

- Courses: Software Security and Principles of Programming Languages

Graduate Research Assistant

- Worked on investigating fairness in autonomous driving under confounding factors and debiasing t2i diffusion models

AZ, USA

August 2024 – Present

August 2023 – August 2024

Mohamed bin Zayed University of Artificial Intelligence

Research Assistant

- Worked on improving network calibration for object detection using MC dropout leading to a publication at CVPR 2023.

Abu Dhabi, UAE

August 2022 – August 2023

WSO2

Software Engineer

- Resolved and deployed 10+ bugs in the language server of the new [Ballerina](#) programming language using Java.

Sri Lanka

May 2022 – August 2022

EDUCATION

Arizona State University

PhD in Computer Science

Advisor – Prof. Chitta Baral

AZ, USA

August 2023 – Present

Graduate GPA – 4.00

University of Moratuwa

BSc (Hons) Eng. - Electronic and Telecommunication Engineering – First Class

Final year project – 3D Object Detection, Tracking and Trajectory Prediction. [\[website\]](#)

Sri Lanka

August 2017 – July 2022

AWARDS AND HONORS

Fulton Fellow Award, Arizona State University

SCAI Conference Award, Arizona State University

Sri Lankan Internet of Things Competition – Open Category, 2nd place

2023

2024

2019

SKILLS

PyTorch | TensorFlow | Hugging Face | Diffusers | Accelerate | TensorRT | C | Unity | Linux | ROS | FPGA | Git | Carla