

Dinesh Samuel Sathia Raj

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Education

University of Michigan

MASTERS OF SCIENCE AND ENGINEERING

ELECTRICAL ENGINEERING AND COMPUTER SCIENCE, COMPUTER VISION SPECIALIZATION

Ann Arbor, USA

Jan. 2021 - Dec. 2022(exp)

Vellore Institute of Technology

BACHELOR OF TECHNOLOGY

ELECTRONICS AND COMPUTER ENGINEERING

CGPA: 9.12/10.00

Chennai, India

Jul. 2016 - Sep. 2020

Experience

Google Summer of Code

STUDENT DEVELOPER FOR INTERNATIONAL NEUROINFORMATICS COORDINATING FACILITY

- Implemented an open source version of Google's recent eye tracking paper
- Ensured reproducibility and efficacy through multiple experiments and tests

Online

Jun. 2021 - Aug. 2021

Fynd Research

APPLIED MACHINE LEARNING INTERN

- Developed cutting edge algorithms for robust background removal in images
- Achieved state of the art results for automatic natural image matting
- Designed method currently live at erase.bg

Mumbai, India

Sep. 2020 - Dec. 2020

SensoVision Systems Pvt Ltd.

COMPUTER VISION RESEARCH INTERN

- Spearheaded the development of QualViz, a cloud based computer vision platform from scratch
- Conceptualized the features, design and workflow for QualViz
- Developed and deployed the Deep Learning algorithms for QualViz - Classification, Detection, Localisation and Anomaly Detection
- Built custom, robust and accurate vision based quality inspection solutions for clients in the automobile and fastener industry

Bengaluru, India

Jan. 2020 - Jul. 2020

Ericsson Global Services Pvt Ltd.

RESEARCH AND DEVELOPMENT INTERN

- Built a completely autonomous drone with a robotic end-effector placed on top
- Responsible for the computer vision and navigation of the drone
- Tasks to be carried out by the drone included erasing white boards, changing light bulbs and fixing faults in telecommunication towers
- Research presented at ICCR 2020, won Excellent Oral Presentation Award

Chennai, India

May 2019 - Aug. 2019

Research

Salient Image Matting

R DEORA, R SHARMA, AND **D S SATHIA RAJ**. *arXiv preprint arXiv:2103.12337 (2021)*.

DOI

Mar. 2021

An Autonomous Drone with Robotic End Effector for Maintenance Operation of 5G Mobile Towers

D S SATHIA RAJ, TV SETHURAMAN, S S SHANKAR, VP YASHVANTH, S K PEREPU, S MOHAN. *International Conference on Control and Robots (ICCR '20)*

DOI

Dec. 2020

Eye State Detection for use in Advanced Driver Assistance Systems

S SHARMA, A NEGI, G S JASMINE, V VAIDEHI, S SINGH, **D S SATHIA RAJ**, S GANESAN. *International Conference on Recent Trends in Advance Computing (ICRTAC '18)*

DOI

Sep. 2018

Projects

Gaze Tracking

- CODED AND DEPLOYED AN ACCURATE AND COMPUTATIONALLY INEXPENSIVE EYE TRACKER USING CONVOLUTIONAL NEURAL NETWORKS
- OPEN SOURCE IMPLEMENTATION OF GOOGLE'S ACCELERATING EYE MOVEMENT RESEARCH VIA ACCURATE AND AFFORDABLE SMARTPHONE EYE TRACKING
- ACHIEVED STATE OF THE ART RESULTS THAT MATCHED THE REPORTED ACCURACY

Link

Anomaly Detection using Deep Learning

- DESIGNED METHODS THAT WORK WITH HIGHLY SKEWED DATA SETS - 75:1 GOOD TO DEFECTIVE RATIO
- BUILT MULTIPLE CLASSIFICATION MODELS WHICH WERE FINE TUNED TO GIVE >98% ACCURACY
- DEVELOPED AN AUTOENCODER BASED ANOMALY DETECTOR THAT COULD BE TRAINED ON ONLY GOOD/NON-DEFECTIVE IMAGES.

Link

Hand Cricket with Computer Vision

- INDIAN SCHOOL GAME OF HAND CRICKET.
- RECOGNIZE NUMBERS FROM 1-6 FROM HAND GESTURES IN REAL TIME.

Link