Sai Siddartha Maram

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EDUCATION

University of California, Santa Cruz, September 2021-
Ph.D. Student, Department of Computational Media

- Department Fellowship (2021-2022)
- Graduate Research Assistatnt (2021-2022)
- UX, Game Motivation Models, Player Modelling, Qualitative Research

Thapar Institute of Engineering and Technology June 2016 - July 2020
Bachelor of Engineering (B.E), Computer Engineering
CGPA: 9.05/10.00

INTERNSHIPS

Invento Robotics, India June 2018 - August 2018, July 2020 - May 2021
Areas : UX, HRI, HCI, Software Software Intern
Guide: CEO Mr.Balaji Vishwanthan

- Performed Qualitative Research with Stakeholders at various stages of Robot Deployment timeline to design Fleet Control Portals.
- Designed and Developed Human In The Loop Experiences to enable Human takeover (navigation) of Robots from remote locations.
- Revamped the existing Navigation stack to ROS to be more efficient
- Introduced Path Planning and autonomous navigation for C-Astra, Mitra, Mitri using ROS.

Indian Institute of Science, India Jan 2020 - July 2020
Areas : UX, Computer Vision, Software Semester Research Scholar
Guide: Prof.Yogesh Simmhan

- Designed and Developed centralized contact tracing applications for covid-19 and querying methods to extract N-hop contacts.
- Developed Computer Vision algorithms for maintaining privacy in surveillance.
- Developed pipelines for detecting image similarity and reducing stress on object detection servers.

Georgia Institute of Technology, USA (GeorgiaTech) June 2019 - Sep 2019
Areas : UX, Software, Computer Vision, LiDAR Summer Research Scholar
Guide: Prof.Yi-Chang Tsai (GeorgiaTech)

- Performed Qualitative Research with Research stakeholders for designing tools for LiDAR data manipulation.
- Developed a novel algorithm for 2D images and 3D point cloud registration.
- Established Geometric Computer (perspective transformation) Vision techniques for traffic sign distance estimation.
- Trained Object Detection models for traffic sign detection. Developed Algorithmic querying, clustering strategies to query LiDAR points.

PUBLICATIONS

Discovering User Interaction Requirements for AI through Personas and User Journey Maps
CHI'22 (Case Study Paper in-review)

- Performed Qualitative studies to study participants of Parallel (a game) to generate User Personas.
- Developed Abstraction and Similarity metrics to quantitatively find similar player in a game called Parallel

- Established a feedback loop with the personas to fix the abstraction in order to generate better visualization methods for players to analyze their data.

Reducing Complexity in Spatio-Temporal Visualization Systems
CHI'22 (Late Breaking Work in-review)

- Performed Qualitative research to understand Pain Points in game trace Visualization systems in Literature.
- Developed an advanced version of GLYPH, to address identified pain points.
- Developed a similarity measurement framework to aggregate game states to tune visualization complexity suitable to a players cognitive capacity.

Generating Graphs Via Images: Cricket as a test-case
ACM Multimedia 2020 (workshop)

- Conceptualized treating a cricket match as a graph problem.
- Automated the generation of graphs through live broadcast. Each edge corresponds to clips of events in the cricket match
- Proposed a querying engine for the graph to extract events from the cricket match.

Images to Signals, Signals to Highlights
IEEE GLOBECOM 2020

- Proposed an innovative solution, to identify events form cricket matches.
- Automated the process of generating highlights. We achieve a wall clock time of 3 minutes to generate highlights of a cricket match, this is a benchmark in the field of highlight generation in cricket.

Neural Network and ROS based Threat Detection and Patrolling Assistance
IEEE ICACCP 2019, India (BEST PAPER)

- Established algorithms on ROS for indoor threat surveillance.
- Trained Object Detection algorithms for weapon detection.

PATENT

A Personal Safety Device and Method Thereof
Patent Application ID (India): 201911005811 (filed)
The prototype involved developing cognitive textile for the first time with computer vision capabilities for protecting women against physical abuse.

UX PROJECTS (recent)

Abric: A UX Research Study in Analyzing Pain Points During Online Fashion Shopping for Indian Women

- Performed Qualitative research in the form of User Interviews, Personas to generate exploratory insights into Online Fashion Shopping.
- Designed an Entire Concept Application addressing these pain points.

SenseIt:Game Motivation Models in Online Physical Training Classes

- Performed Qualitative research in the form of User Interviews with students and Physical Training instructors to understand current evaluative metrics in Physical training classes.
- Designed and Developed a Narrative Based game using mobile sensors to evaluate Physical Fitness.

Captain Bhor : Having Students Play with Chemistry

- Designed and Developed a Narrative Based Action game for students to learn Chemistry Concepts