Prasoon Patidar

Ph.D. Student, Carnegie Mellon University

Hi, I am a 4th year Ph.D student in Software and Societal Systems at CMU. I love building (hardware and software) systems, with special focus on learning based systems. I am advised by Dr. Yuvraj Agarwal, and my research interest lies in how we can enhance utility of smart environments towards user health and wellness. I am also actively engaged with Edusense, a university scale classroom sensing project where we study how Human-AI collaboration can promote better teaching practices. Seeking research internship opportunities in domain of user focused sensing and applied machine learning.

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PUBLICATIONS

Conference Paper

VAX: Using Existing Video and Audio-based Activity Recognition Models to Bootstrap Privacy-Sensitive Sensors

Author(s)

Prasoon Patidar, Mayank Goel, Yuvraj Agarwal

27 September 2023

Proceedings of the ACM on IMWUT, Volume 7, Issue 3, Article No. 117, pp 1-24

A novel system, VAX (Video Audio to 'X'), where training labels acquired from existing A/V models are used to train ML models for other privacy-sensitive sensors.

Conference Paper

TAO: Context Detection from Daily Activity Patterns Using Temporal Analysis and Ontology

Author(s)

Sudershan Boovaraghavan, Prasoon Patidar, Yuvraj Agarwal

27 September 2023

Proceedings of the ACM on IMWUT, Volume 7, Issue 3, Article No. 87, pp 1-32

A hybrid context detection system that leverages OWL-based ontologies and temporal clustering approaches to detect high-level contexts from human activities.

Conference Paper

"An Instructor is [already] able to keep track of 30 students": Students' Perceptions of Smart Classrooms for Improving Teaching & Their Emergent Understandings of Teaching and Learning

Author(s)

Tricia J Ngoon, David Kovalev, Prasoon Patidar, Chris Harrison, Yuvraj Agarwal, John Zimmerman, Amy Ogan,

July 14, 2023,

DIS '23: Designing Interactive Systems Conference (Honorable Mention)

A speed dating study with storyboards study to explore student values and boundaries regarding the acceptance of classroom sensing systems in STEM college courses.

Conference Paper

Optimizing Adaptation of Smart Traffic Lights with Resource Constraints

Author(s)

Prasoon Patidar, Geoffrey B Dobson, Kathleen M Carley, Yuvraj Agarwal

09 November 2021

IEEE World Forum on Internet of Things (WF-IoT), pp. 211-216

We explore the idea of efficiently deploying smart intersections within given budget constraints in a city using a generic simulation-based framework.

WORK EXPERIENCE

Data Scientist

Bidgely Technologies

08/2017 - 08/2020 *Bangalore, India*

Achievements/Tasks

- Applied advanced statistical & predictive modelling techniques and utilizing regression methods to estimate global impact of Bidgely's engagement on customers for energy savings
- Created automation pipeline for various Energy Efficiency experiments and verification reports on a periodic basis
- Curated personalized lifestyle attributes for customers based on their energy usage patterns to improve quality of targeted rebate programs and user recommendations

EDUCATION

Ph.D. in Societal Computing

Carnegie Mellon University

08/2020 - Present
Pittsburgh, USA

B.Tech in Computer Science

Indian Institute of Technology, Delhi

08/2013 - 08/2020
New Delhi, India

SKILLS

Hardware. / Software Systems

Data Science | Deep Learning

Sensor and Actuators | IoT Frameworks

Artifical Intelligence | Statistical Modeling

RESEARCH PROJECTS

Edusense: Classroom Sensing at Scale
(08/2020 - 12/2023)

- Studying Human- AI collaboration towards professional growth of STEM university instructors
- Built an analytics system (In submission) to provide insights and recommentations at course level
- Working on building an intelligent agent to understand classroom activities and associate classroom behavior to individual students anonymously
- Repository: **https://github.com/edusense**

TECHNICAL SKILLS

Languages & Hardware

Python, MySQL, C, C++, Go, Arduinos, Particle Devices, Ti Sensors, Raspberry Pi

Web Frameworks

ReactJS, Flask, Streamlit

INTERESTS

Sensing for User Health and Wellness

Activity Recognition Systems

Human-AI Collaboration