

Swadhin Pradhan

MACHINE LEARNING ENGINEERING TECH LEAD

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Education

The University of Texas at Austin

Austin, Texas, USA

PH.D. IN COMPUTER SCIENCE

2014 - 2020

- Thesis: Battery-free Wireless Sensing and Beyond
- Advisor: Lili Qiu

Indian Institute of Technology Kharagpur

Kharagpur, WB, India

M.S. (BY RESEARCH) IN COMPUTER SCIENCE AND ENGINEERING

2012 - 2014

- Thesis: Improving Localization and Energy Efficiency of Smartphone Applications
- Advisor: Niloy Ganguly

Jadavpur University

Kolkata, WB, India

B.E.(HONORS) IN INFORMATION TECHNOLOGY

2007 - 2011

- University Gold Medal
- CGPA: 9.45/10.0

Experience

DEVELOPMENT

Data Science Group, Cisco Meraki

Austin, TX, USA

ML ENGINEERING TECHNICAL LEAD

May 2025 - Present

- Working on Sherlock, a GenAI-driven intelligent PCAP analysis tool (in private beta)
- Working on peer view on impact of AI-RRM (AI-driven Radio Resource Management)

SENIOR ML ENGINEER

October 2020 - May 2025

- Built RAG + LLM-based chat-bot aka *Cisco AI Assistant* which calls internal APIs and searches through internal documents
- Instrumental in developing Networks Like You feature at Meraki Dashboard which helps customers to better plan configurations

Interra Systems India Pvt. Ltd.

Kolkata, WB, India

SOFTWARE ENGINEER

May 2011 - Jan. 2012

- Successfully built an XML parser for a data format converter named OVC
- Built a front-end and command parser of a Graphical User Interface (GUI) viewer tool named Mirus3G

RESEARCH

Mobile Communications + Networking Group, NEC Labs America

Princeton, NJ, USA

RESEARCH INTERN

May 2017 - Oct. 2017

- Built a prototype of mobile voice assistant for future smart homes
- Two internal patents are filed based on the work

RESEARCH INTERN

May 2016 - Oct. 2016

- Built a prototype of RFID based seamless retail checkout system
- Built a RFID based battery-free touch interface

Mobility & Networking Group, Hewlett-Packard Enterprise Labs

Palo Alto, CA, USA

RESEARCH INTERN

May 2015 - Aug. 2015

- Built a mobile application to assess notification importance based on user engagement level

Publications

SELECTED CONFERENCE/JOURNAL PAPERS

1. From Invisible to Actionable: Augmented Reality Interactions with Indoor CO₂

CHI 2026

P. KARMAKAR, M. YADAV, S. ROUT, **SWADHIN PRADHAN**, AND S. CHAKRABORTY

April 2026

- Proceedings of the 2026 CHI Conference on Human Factors in Computing Systems, Barcelona, Spain

2. Indoor Air Quality Dataset with Activities of Daily Living in Low to Middle-income Communities

P. KARMAKAR, **SWADHIN PRADHAN**, AND S. CHAKRABORTY

NeurIPS 2024

December 2024

- The Thirty-Eighth Annual Conference on Neural Information Processing System, Vancouver, Canada

3. Exploring Indoor Air Quality Dynamics in Developing Nations

P. KARMAKAR, **SWADHIN PRADHAN**, AND S. CHAKRABORTY

ACM Compass

July 2024

- ACM Journal on Computing and Sustainable Societies, September, 2024

4. Continuous Multi-user Activity Tracking via Room-Scale mmWave Sensing

A. SEN, A. DAS, **SWADHIN PRADHAN**, AND S. CHAKRABORTY

ACM/IEEE IPSN

May 2024

- The ACM/IEEE International Conference on Information Processing in Sensor Networks, May, 2024

5. Rotation Sensing Using Passive RFID Tags

SWADHIN PRADHAN, S. LI, AND L. QIU

ACM MobiHoc

July 2021

- Symposium on Theory, Algorithmic Foundations, & Protocol Design for Mobile Networks and Computing, July, 2021, Shanghai, China

6. RTSense: Passive RFID based Temperature Sensing

SWADHIN PRADHAN, AND L. QIU

ACM SenSys

Nov. 2020

- The 18th ACM Conference on Embedded Networked Sensor Systems, November, 2020, Yokohama, Japan

7. Combating Replay Attacks Against Voice Assistants

SWADHIN PRADHAN, W. SUN, G. BAIG, AND L. QIU

UBICOMP

Sept. 2019

- Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT) Journal Issue 3, September, 2019

8. Smartphone-based Indoor Space Mapping

SWADHIN PRADHAN, G. BAIG, W. MAO, L. QIU, G. CHEN, AND B. YANG

UBICOMP

Oct. 2018

- Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT) Journal Issue 2, June, 2018

9. RIO: A Pervasive RFID-based Touch Gesture Interface

SWADHIN PRADHAN, E. CHAI, K. SUNDARESAN, L. QIU, M. A. KHOJASTEPOUR, AND S. RANGARAJAN

MOBICOM

Oct. 2017

- The 23rd Annual International Conference on Mobile Computing and Networking (MobiCom), 2017, Snowbird, UT, USA

10. Understanding and managing notifications

SWADHIN PRADHAN, L. QIU, A. PARATE, AND K.H. KIM

INFOCOM

May 2017

- The 36th IEEE International Conference on Computer Communications (INFOCOM), 2017, Atlanta, GA, USA

11. ActivPass: Your Daily Activity is Your Password

S.K. DANDAPAT, **SWADHIN PRADHAN**, R.R. CHOUDHURY, N. GANGULY, AND B. MITRA

CHI

April 2015

- The 33rd Annual ACM Conference on Human Factors in Computing Systems (CHI), 2015, Seoul, Korea
- Extensively covered in popular technical press such as MIT Technology Review, Boston Globe, The Guardian, American Banker etc.

Patents

1. Battery-free touch-aware user input using RFID tags

US Patent: 10,346,655

E. CHAI, **SWADHIN PRADHAN**, S. RANGARAJAN, M. KHOJASTEPOUR, AND K. SUNDARESAN

July 2019

- Patent is filed with NEC Labs America
- Proposes a design of battery-free touch interface using RFID tags

2. Mobile Device Notification Scheduling

WIPO Patent: WO/2017/131748

SWADHIN PRADHAN, A. PARATE, K.H. KIM, AND J. COOK

Aug. 2017

- Patent is filed with HPE Labs
- Proposes a system which schedules notifications in mobile devices intelligently

Technical Skills

Programming Languages	Python, C, Java, C++, SQL
Software Engineering Knowledge	ETL, Data Visualization, REST APIs, CI/CD, MLOps and DevOps
Cloud Technologies	Snowflake, AWS S3 / Lambda / Glue / Redshift, Kubeflow, Terraform
Tools used	OpenCL, MATLAB, NS3, Scikit-learn, Doxygen, SWIG, Pajek, NS2, FFMpeg, Flex, Bison
Deep Learning Frameworks	TensorFlow, PyTorch, Keras