

# Swadhin Pradhan

MACHINE LEARNING ENGINEERING TECH LEAD

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## Education

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### The University of Texas at Austin

PH.D. IN COMPUTER SCIENCE

Austin, Texas, USA

2014 - 2020

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

### Indian Institute of Technology Kharagpur

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

Kharagpur, WB, India

2012 - 2014

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

### Jadavpur University

B.E.( HONORS ) IN INFORMATION TECHNOLOGY

Kolkata, WB, India

2007 - 2011

- University Gold Medal
- CGPA: 9.45/10.0

## Experience

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### DEVELOPMENT

#### Data Science Group, Cisco Meraki

ML ENGINEERING TECHNICAL LEAD

Austin, TX, USA

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.

SOFTWARE ENGINEER

Kolkata, WB, India

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

RESEARCH INTERN

Princeton, NJ, USA

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

RESEARCH INTERN

Palo Alto, CA, USA

May 2015 - Aug. 2015

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

## Publications

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### SELECTED CONFERENCE/JOURNAL PAPERS

#### 1. From Invisible to Actionable: Augmented Reality Interactions with Indoor CO<sub>2</sub>

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

<b>2. Indoor Air Quality Dataset with Activities of Daily Living in Low to Middle-income Communities</b>	NeurIPS 2024
P. KARMAKAR, <b>SWADHIN PRADHAN</b> , AND S. CHAKRABORTY	December 2024
• The Thirty-Eighth Annual Conference on Neural Information Processing System, Vancouver, Canada	
<b>3. Exploring Indoor Air Quality Dynamics in Developing Nations</b>	ACM Compass
P. KARMAKAR, <b>SWADHIN PRADHAN</b> , AND S. CHAKRABORTY	July 2024
• ACM Journal on Computing and Sustainable Societies, September, 2024	
<b>4. Continuous Multi-user Activity Tracking via Room-Scale mmWave Sensing</b>	ACM/IEEE IPSN
A. SEN, A. DAS, <b>SWADHIN PRADHAN</b> , AND S. CHAKRABORTY	May 2024
• The ACM/IEEE International Conference on Information Processing in Sensor Networks, May, 2024	
<b>5. Rotation Sensing Using Passive RFID Tags</b>	ACM MobiHoc
<b>SWADHIN PRADHAN</b> , S. LI, AND L. QIU	July 2021
• Symposium on Theory, Algorithmic Foundations, & Protocol Design for Mobile Networks and Computing, July, 2021, Shanghai, China	
<b>6. RTSense: Passive RFID based Temperature Sensing</b>	ACM SenSys
<b>SWADHIN PRADHAN</b> , AND L. QIU	Nov. 2020
• The 18th ACM Conference on Embedded Networked Sensor Systems, November, 2020, Yokohama, Japan	
<b>7. Combating Replay Attacks Against Voice Assistants</b>	UBICOMP
<b>SWADHIN PRADHAN</b> , W. SUN, G. BAIG, AND L. QIU	Sept. 2019
• Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT) Journal Issue 3, September, 2019	
<b>8. Smartphone-based Indoor Space Mapping</b>	UBICOMP
<b>SWADHIN PRADHAN</b> , G. BAIG, W. MAO, L. QIU, G. CHEN, AND B. YANG	Oct. 2018
• Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT) Journal Issue 2, June, 2018	
<b>9. RIO: A Pervasive RFID-based Touch Gesture Interface</b>	MOBICOM
<b>SWADHIN PRADHAN</b> , E. CHAI, K. SUNDARESAN, L. QIU, M. A. KHOJASTEPOUR, AND S. RANGARAJAN	Oct. 2017
• The 23rd Annual International Conference on Mobile Computing and Networking (MobiCom), 2017, Snowbird, UT, USA	
<b>10. Understanding and managing notifications</b>	INFOCOM
<b>SWADHIN PRADHAN</b> , L. QIU, A. PARATE, AND K.H. KIM	May 2017
• The 36th IEEE International Conference on Computer Communications (INFOCOM), 2017, Atlanta, GA, USA	
<b>11. ActivPass: Your Daily Activity is Your Password</b>	CHI
S.K. DANDAPAT, <b>SWADHIN PRADHAN</b> , R.R. CHOUDHURY, N. GANGULY, AND B. MITRA	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

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<b>1. Battery-free touch-aware user input using RFID tags</b>	US Patent: 10,346,655
E. CHAI, <b>SWADHIN PRADHAN</b> , 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	
<b>2. Mobile Device Notification Scheduling</b>	WIPO Patent: WO/2017/131748
<b>SWADHIN PRADHAN</b> , 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

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