Swadhin Pradhan

Machine Learning Engineering Tech Lead
12101 Bluebonnet Ln, Manchaca, Texas - 78652, USA
(+1) 737-222-8807 | swadhinjeet88@gmail.com | www.swadhinpradhan.com | swadhin | swadhin

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 Infrastructure 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 CO_2 — *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 *NeurIPS 2024*

P. Karmakar, **Swadhin Pradhan**, and S. Chakraborty *December 2024*

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

3. Exploring Indoor Air Quality Dynamics in Developing Nations *ACM Compass*

P. Karmakar, **Swadhin Pradhan**, and S. Chakraborty *July 2024*

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

4. Continuous Multi-user Activity Tracking via Room-Scale mmWave Sensing *ACM/IEEE IPSN*

A. Sen, A. Das, **Swadhin Pradhan**, and S. Chakraborty *May 2024*

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

5. Rotation Sensing Using Passive RFID Tags *ACM MobiHoc*

Swadhin Pradhan, S. Li, and L. Qiu *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 *ACM SenSys*

Swadhin Pradhan, and L. Qiu *Nov. 2020*

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

7. Combating Replay Attacks Against Voice Assistants *UBICOMP*

Swadhin Pradhan, 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

8. Smartphone-based Indoor Space Mapping *UBICOMP*

Swadhin Pradhan, 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

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

Swadhin Pradhan, 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

10. Understanding and managing notifications *INFOCOM*

Swadhin Pradhan, L. Qiu, A. Parate, and K.H. Kim *May 2017*

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

11. ActivPass: Your Daily Activity is Your Password *CHI*

S.K. Dandapat, **Swadhin Pradhan**, 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

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