

# Arjun Bakshi

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RESEARCH AREAS Machine Learning, Data Mining (Time-series, Sensor, Graph, Text data), Wireless Communication

EXPERIENCE **Applied Scientist, Device Demand Planning, Amazon** April 2020 - Present

- **Product Knowledge Graphs:** Conduct analysis to identify missing information about products sold on Amazon.com, and building automated systems that fill in missing information accurately by leveraging deep learning models and data from relevant websites.
- **Demand Forecasting:** Design and deployment of machine learning models that forecast the world wide demand for Amazon products at different levels of granularity. Curated and put into production new data sources for price and supply constraints which improve the accuracy of the models. Actively researching new model designs that can generate forecasts to support different business decisions.

**Graduate Research Associate, The Ohio State University** May 2015 - Jan 2020

- **Machine Learning Aided Channel Prediction:** Designed and prototyped a system that uses pre-trained machine learning models to reduce overheads related to estimation of signal quality in LTE networks. The system can provide a 10x-100x speed up compared to existing methods. Presented this system and research at the ACM MobiCom Conference in 2019 [paper](#)
- **Semi-Supervised Community Detection:** Developed and evaluated an algorithm that extracts telltale patterns of community structure from a small training set, and uses them to greatly improve the quality of detected communities. Evaluation on real world datasets showed 10%-20% higher accuracy and ability to recover hidden communities in social networks. Research published at IEEE International Conference on Data Mining, 2018, Singapore. [paper](#)

**Graduate Teaching Assistant, The Ohio State University** Aug 2013 - May 2016

- Received the **Eleanor Quinlan Memorial Award** for teaching.

**Student Researcher, Cincinnati Children's Hospital Medical Center** May 2012 - May 2013

- **Image Analysis of Brain Tumors:** Designed, implemented, and tested a pipeline that identifies patterns in high throughput medical (brain biopsy) images that are associated with some types of cancers ([poster](#))

SELECTED PUBLICATIONS

- *Fast and Efficient Cross Band Channel Prediction Using Machine Learning*, International Conference on Mobile Computing and Networking, ACM MobiCom 2019, Mexico. [paper](#)
- *Semi-Supervised Community Detection Using Structure and Size*, IEEE International Conference on Data Mining, ICDM 2018, Singapore. [paper/](#) [slides/](#) [code](#)
- *EMIT: An efficient MAC paradigm for the Internet of Things*. IEEE International Conference on Computer Communications, IEEE INFOCOM, 2016, San Francisco, USA . [paper](#)

EDUCATION Ph.D Computer Science and Engineering, The Ohio State University Aug 2013 - Jan 2020

M.S. Computer Science, University of Cincinnati Aug 2010 - May 2013

B.Eng., Information Technology, University of Mumbai Aug 2006 - May 2010

TECHNICAL SKILLS

- Applied Machine Learning, RF Systems, Signal Processing
- Languages/tools: Python, SQL, EMR