





HITESH BASANTANI

APPLIED DATA SCIENTIST

CONTACT

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EDUCATION

Master of Information and Data Science

University of California, Berkeley (2023-Current)

PhD, M. Sc, B. Sc. in Engineering Science and Mechanics

The Pennsylvania State University, University Park (2004 – 2014)

PROGRAMMING

Python (NumPy, Pandas,
Scikit-learn, PyTorch,
TensorFlow and Keras)
AWS ECR Image Containers
MySQL,
PostgreSQL
Neo4j
FastAPI
Git
Docker

PROFESSIONAL OVERVIEW

Data scientist with a demonstrated track record for finding solutions to abstruse problems using data. 15+ years of experience of technical leadership in developing new processes, improving quality, yield, and reliability on high-volume processes.

WORK EXPERIENCE

Yield and Technology Development Engineer (Intel Corp.) 2018-Current

Technical Expertise:

- Developed predictive neural-network models which generated 2-dimensional correction that can be applied in-situ during the manufacturing process to improve mask CD uniformity. These correction maps, improved mask yield by 0.5% and get utilized for each reticle manufactured at Intel for this process.
- Developed and deployed pattern placement correction maps built using neural network models which recommend a 2-D placement correction. These maps improve pattern placement variation by 25%.
- Pioneered a decision tree-based regression models written using XGBoost library in python to recommend etch recipe selection. The regression model led to an improvement of 0.3% in yield and improve average Critical Dimension (CD) values on all reticles manufactured by Intel.
- Communicated updates to second level management regularly on challenges facing the manufacturing process and drove working groups to find and implement solutions.
- Provides technical mentorship by being first chair on an inter-module team focusing on pattern placement improvement projects and part of the committee that drives critical dimension improvement projects.

Leadership Expertise:

- Provides technical mentorship by being first chair on an inter-module team focusing on pattern placement improvement projects and part of the committee that drives critical dimension improvement projects.
- Provides technical and career mentorship by serving on change control boards and covering for manager in their absence.

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SKILLS

Lithography

E-beam

Chemical Vapor Deposition

Thin Film Deposition

Scanning Electron Microscopy

Rutherford Backscatter

Spectroscopy

X-ray Diffraction

X-ray reflectivity

Energy-dispersive Spectroscopy

Ellipsometry

Atomic Force Microscopy

WORK EXPERIENCE CONTINUED

Process Technology Development Engineer (Intel Corp.) 2014-2018

- Developed new metrics through advanced statistical learning methods for tracking tool performance and directed improvements with the vendor. These efforts helped improved tool up-time by reducing number of adjustments needed on the tool and drive toolset up-time by 3%
- Went beyond the scope of a tool owner by observing process variability and helped improve reticle pattern placement performance by providing recommendations to yield engineers. This effort resulted in a 40% reduction in the standard deviation associated with a product metric important to the customer.

REFERENCES

Available Upon Request