

B. Selin Tosun, Ph.D.

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Github: [/BanuSelinTosun](https://github.com/BanuSelinTosun)

Patents, Publications, Honors, and Awards: banuselintosun.com

Seattle, WA

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Data Scientist with 10+ years of experience in analytical problem solving

Technical Skills

Expertise: Python (pandas, NumPy, Seaborn, Scikit-learn, TensorFlow, Caffe2), Spark, SQL, MatLab, Machine Learning, Feature Engineering, Experimental Design, Statistical Analysis, Git

Proficient: Databricks, Hadoop, QGIS, Flask, HTML, CSS, Horovod, Docker, Octave, AWS, MS Azure, CNTK

Professional Experience

Senior Data Scientist, Neal Analytics, Kirkland, WA

Consulting Microsoft Azure Storage and Lenovo

April 2018 – Present

- *Preventative Maintenance* for laptop crashes using big data (40 GB daily over the course of 4 months) in PySpark environment
- Developed Hypothesis driven investigation maps to priorities the value and the collection feasibility of necessary data
- Formed multi-component solution engine that detects Anomalies and predicts (via Clustering & Classification) fail types
- Built & developed & optimized *Object Detection* models (achieved over 48 % AP) from various Tensorflow Model Zoo algorithms via tensor-board, RetinaNet, and FB Detectron in caffe2 environment utilizing Docker images
- Curated new data sets using ffmpeg and lblImage (images and annotations)
- Built pipelines to customize trainings and model comparison for end-user in mean Average Precision and Inference time
- Developed a distributed training pipeline by Horovod to shorten the training time by number of nodes
- Helped to build a custom transfer-learning for Behavior Detection in Videos

Data Science Fellow, Insight, Seattle, WA

January 2018 – March 2018

- Built & developed takeapic.online, a Facial Expression Analyzer using Convolutional Neural Network (CNN) in Python (Keras-TensorFlow, training with GPU-Cuda) to improve social media experience
 - Built multi-classification CNN with Facial Expression Data Base of 55K+ images and achieved >98% accuracy

Data Science Student, Galvanize, Inc., Seattle, WA

June 2017 – September 2017

- Built & developed street-smart-realty.com, a Real-Estate housing price estimator using Python (pandas, NumPy, scikit-learn, matplotlib) and QGIS Grid-Search of Random Forest, Gradient Boosting, XG-Boost, SVM, Elastic Net
- Gathered data from various resources: King County, Seattle Public Schools, Great Schools, Zillow
 - Achieved model performance of 11.3 % median absolute percent error

Senior Process Engineer, Intel Corporation, Hillsboro, OR

April 2015 – April 2017

- Developed new plasma etching processes for continuously evolving state-of-the-art transistors; optimized the process to increase yield by 10% in < 4 months
- Published a white paper on upgrading the reliability of etch tools to improve part lifetime

Post-Doctoral Research Associate, University of Washington, Seattle, WA

July 2013 – February 2015

- Built a novel spectrometer to analyze and improve solar cell efficiencies as a function of thickness via modelling in MatLab

Research Assistant, University of Minnesota, Minneapolis, MN

January 2009 – June 2013

- Performed experimental design producing 1000+ samples state-of-the-art thin film solar cell devices and compared with the base-line (1000+ samples) to identify significant differences in each trial in MatLab: [2 US Patents](#), [7 peer-review articles](#)

Education

Certificate in Data Science

September 2017

Galvanize Inc., Seattle, WA

Ph.D. in Chemical Engineering

June 2013

University of Minnesota, Minneapolis, USA (In top 3 Graduate ChemE programs in US: MIT, UMN, CalTech)

- Doctoral Dissertation Fellowship: awarded to top 1% of the graduating Ph.D. students

B.Sc. in Chemical Engineering, *summa cum laude*

June 2007

B.Sc. in Material Science and Metallurgical Engineering, *magna cum laude*

June 2008

Istanbul Technical University, Turkey