Ozmen Erkin Kokten

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EDUCATION

Oregon State University, Corvallis, OR

PhD, Computer Science **06/2027**

MS, Computer Science **06/2025**

GPA: 3.82

Interests: Machine Learning, Estimation, Optimization

Coursework: Convex optimization; deep learning; estimation detection and filtering; linear systems; database management systems

Bilkent University, Ankara, TURKEY **05/2022**

Bachelor of Science, Electrical – Electronics Engineering

SKILLS

- Artificial Intelligence: **Machine Learning Models**, **Deep Learning Methods**, **PyTorch**, **TensorFlow**, **Sklearn**, OpenCV
- Programming Languages and Libraries: **Python**, **Pandas,** Java, C, C++, Assembly, VHDL, MATLAB
- Other Tools: OpenMP, OpenCL, Qt, Git, **SQL**

EXPERIENCE

Oregon State University, Corvallis, OR **09/2022 – Present**

Graduate Research Assistant

- Developed a training strategy with non-linear state-space models allowing long-term **time-series forecasting**.
- Trained **LSTM** models using **Python** and **PyTorch** to forecast Soil Water Content, achieving forecasts up to 48 hours with 95% relative accuracy, essential for smart irrigation and viticulture.
- Working on model predictive control methods using AI predictive models to enforce SWC levels under water use constraints.

Intel Corporation, Hillsboro, OR **07/2024 – 09/2024**

Software Research Engineer Intern

- Innovated a baseline for a chip comparison tool by generating transistor data using 10 segmentation methods and local layout effects via Intel-proprietary **query language**, enabling region-specific comparisons for enhanced defect analysis.
- Developed scripts for data processing, visualization, clustering (agglomerative), and dimensionality reduction (t-SNE, UMAP) leveraging **Python, Pandas** and **Sklearn**, allowing faster transistor comparisons with interactive visuals.
- Conducted a comparative study on Arrow Lake and Panther Lake chip design layouts to investigate transistor defects, uncovering transistor patterns.
- Provided a feasibility study on required database storage and an efficient method for storing and retrieving data using a B+ Tree database structure.

Novit.AI, Ankara/Turkey **02/2022 – 04/2022**

Deep Learning Engineer

- Implemented SpatialAI functionality for object detection on OAK-D-Lite camera and deployed an informational website via **AWS** and **Python**.

Arçelik Global, Istanbul/Turkey **07/2021 – 09/2021**

Deep Learning Engineering Intern

- Developed a Convolutional Neural Network model using **TensorFlow** and **Python** to predict refrigerator fullness, achieving 96% accuracy.

PROJECTS

Image Based Autonomous Navigation using OpenCV, Role: Co-Developer, https://bit.ly/48pnZQX **Spring 2022**

- Partnered with ArdicLabs for Senior Capstone to build a UAV navigation system using geo-referenced images via **C++**.
- Enabled navigation without GPS by applying Computer Vision for real-time location, direction, and speed estimation.
- Integrated Inertial Navigation as a fallback mechanism.

Racial Bias Mitigation of BERT Base Uncased Language Model, **Spring 2022**

- Racial bias in contextual word embeddings is mitigated by fine tuning the BERT base uncased language model.
- Template based quantifying method is used for bias quantification.

Image Captioning using Deep Learning Techniques, https://bit.ly/3Uhsk32 **Fall 2021**

- Completed a Neural Networks course project utilizing a CNN encoder-RNN decoder architecture for image captioning.
- Employed Inception V3 for feature extraction and experimented with GRU and LSTM for the RNN decoder.

Animal Classifier using Convolutional Neural Networks, https://bit.ly/48jaT7L **Fall 2021**

- Conducted a Machine Learning project using CNNs for animal image classification and StarGAN v2 for image fusion.

Airline Passenger Satisfaction Predictor using Machine Learning Algorithms, https://bit.ly/4hl9Et8 **Spring 2021**

- Contributed to a group project in Statistical Learning and Data Analytics course, implementing K-Nearest Neighbors, Support Vector Machine, Decision Tree, and Random Forest classifiers from scratch in Python for airline satisfaction analysis.

PUBLICATIONS

- **Kokten, O. E**., Raich, R., Maximum Likelihood Estimation of Stable ARX Models using Randomized Coordinate Descent. Submitted for review at ICASSP ’25.
- **Kokten, O. E**., Raich, R., Fern, A., & Holmes, J. (2024). Learning Extended Forecasts of Soil Water Content via Physically-Inspired Autoregressive Models, ICMLA ’24.

EXTRACURRICULAR ACTIVITIES

Coalition of Graduate Employees, Corvallis, OR **03/2024 – 06/2024**

Organizer in International Caucus

- Contributed to the preparation of an incoming international graduate student guide, incorporating personal experiences to make the resource more relevant and practical.

Social Awareness Projects, Ankara/Turkey, **09/2018 – 06/2021**

Volunteer Member

- Dedicated 10 hours per month for hospital visits, providing cheer and companionship to children with Leukemia.
- Assembled and distributed educational kits for underprivileged school-aged children in rural regions amidst the COVID-19 crisis.

CERTIFICATIONS

- Convolutional Neural Networks, deeplearning.ai, 08/2021
- Neural Networks and Deep Learning, deeplearning.ai, 08/2020
- Machine Learning by Stanford University on Coursera, 2019

HOBBIES AND INTERESTS

- Rock climbing, playing tennis and volleyball, travelling