Ozmen Erkin Kokten

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EDUCATION

PhD, Computer Science, Oregon State University 09/2022 - 05/2027

- GPA 3.82/4.0, **Coursework**: Convex Optimization; Deep Learning, Estimation, Detection, and Filtering; Linear Systems; Database Management Systems

Bachelor of Science, Electrical and Electronics Engineering, Bilkent University 09/2017 - 06/2022

WORK EXPERIENCE

Graduate Research Assistant 09/2022 - Now
Oregon State University *Corvallis, OR*

- 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.

Software Research Engineer Intern 07/2024 - 09/2024
Intel Corporation *Hillsboro, OR*

- 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.

Deep Learning Engineer 02/2022 - 04/2022
Novit.AI *Ankara, Turkey*

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

Deep Learning Engineering Intern 07/2021 – 09/2021
Arcelik *Istanbul, Turkey*

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

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

PROJECTS

Image Based Autonomous Navigation using OpenCV, 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,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,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,bit.ly/4hl9Et8 Spring 2021

- Contributed to a group project in the 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, 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.

EXTRA-CURRICULAR ACTIVITIES

Organizer in International Caucus 03/2024 – 06/2024
Coalition of Graduate Employees *Corvallis, OR*

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

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

- Dedicated 10 hours per month for hospital visits, providing cheer and companionship to children with Leukemia.
- Distributed educational kits to underprivileged school-aged children residing in rural areas during the COVID-19 pandemic.

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, traveling