

Hüsnü Murat Koçak

Artificial Intelligence Researcher

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EDUCATION

KU Leuven

International Scholar of Computer Science

Leuven - Belgium

2021 - 2022

- 1-year exchange for master's thesis

Galatasaray University

Master of Science in Computer Engineering

Istanbul - Turkey

2020 - 2022

- GPA: 3.56
- Thesis topic: Machine Learning Based Autonomous Quality Control and Characteristics Extraction for Chip Research
This thesis explores the potential implementations of machine learning in chip manufacture to increase the production efficiency, reduce time-cost of quality controls and categorize the characteristics of transistors.

Konya Technical University

Bachelor of Science in Computer Engineering

Konya - Turkey

2015 - 2020

- Graduation Project: Development of blackboard behavior tree with natural behavior sequences of AI characters in 3D Action-RP game, made by Unreal Engine 4.

WORK EXPERIENCE

IMEC

Artificial Intelligence Researcher

Leuven - Belgium

June 2021 – Present

- Researching on the categorization of the transistor characteristics, in respect of output signals of sweep routine measurements by combined machine learning and deep learning (CNN & LSTM) techniques.
- Developing the software with graphical user interface and scripts to help scientist who aims to find defects on transistors that printed on wafers.

IMEC

Artificial Intelligence Researcher

Leuven - Belgium

January 2020 – April 2020

- Researched classification and clustering of nano-metric level light distributed images taken from chip design to decrease detecting time of defects in the field of photolithography by machine learning and deep learning methods.
- Researched on detection of components on chip by computer vision and image processing algorithms combined with CNN.
- Researched on the increasement of accuracy quality of OPC simulation with GPU acceleration.

INRIA

Artificial Intelligence Researcher Intern

Nancy - France

July 2019 – October 2019

- Researched mining of complex metabolomic data, where particularly developed feature selection, extraction, and ranking operations.
- Researched on comparison of multiple classification and clustering methods in machine learning and AI for mining such numerical data in the field of bioinformatics.

Bay E Information Education and Consultant*Artificial Intelligence & Software Engineer***Konya - Turkey***October 2018 – July 2019*

- Researched rock stability, landslide probability and factor of safety by supervised machine learning methods in the field of mining engineering.
- Developed web-based 3D visualization application for represent LIDAR point cloud with OpenCV, and backend admin panels

KOMTAŞ Information Management*Software Engineer Intern***Ankara - Turkey***January 2016 – August 2016*

- Developed libraries for accelerate data analytics process and implementing to backend of web application.
- Developed frontend user and admin panels with java and spring frameworks.

KEYWORDS & SKILLS

Keywords: Computer vision, Machine learning, Deep learning (CNN, RNN, GAN), Data mining and Meta mining, Pattern Recognition, Complex networks, Software development

Programming Languages: Python, JavaScript, SQL

OS, Framework, Software: Ubuntu, Tensorflow, PyTorch, Scikit-learn, OpenCV, Pandas, NumPy, Matplotlib, Tsfresh, PyQT5, PostgreSQL

Languages: Native in Turkish, Fluent in English, Basic in French

PUBLICATIONS

- H. M. Kocak, A. T. Naskali, O. Pinarer, J. Mitard, "Detecting Transistor Defects in Medical Systems Using a Multi Model Ensemble of Convolutional Neural Networks." IEEE International Conference of Big Data (2021). DOI: 10.1109/BigData52589.2021.9671667
- H. M. Kocak, J. Mitard, A. T. Naskali, "Combined Machine Learning Techniques For Characteristics Classification and Threshold Voltage Extraction of Transistors." 34th IEEE International Conference on Microelectronic Test Structures (2022). – Available in 1st of June 2022.

INTERESTS

Bachata dancer, guitar & ukulele player, loves board games and history.

- References available on request -

(February 26, 2022)