Atilla B.
Senior Senior Data Scientist

SUMMARY

- 6 years of experience - Senior Data Scientist with specialization in Machine Learning and Computer Vision - Advanced English.

TECHNICAL SKILLS

Main Technical Skills	Python (6 yr.), TensorFlow (5 yr.), AWS
Programming Languages	Python (6 yr.), R
AI & Machine Learning	AWS SageMaker (Amazon SageMaker), NumPy, OpenCV (6 yr.), Scikit-learn (6 yr.), TensorFlow (5 yr.)
Python Frameworks	Flask (6 yr.)
Python Libraries and Tools	Matplotlib, NumPy, Pandas, Scikit-learn (6 yr.), Seaborn, TensorFlow (5 yr.)
Data Analysis and Visualization Technologies	Jupyter Notebook, Pandas
Databases & Management Systems / ORM	AWS DynamoDB
UI Frameworks, Libraries, and Browsers	Dlib
Cloud Platforms, Services & Computing	AWS
Amazon Web Services	AWS API Gateway, AWS Boto3, AWS Cloud Data Science services (6 yr.), AWS DynamoDB, AWS EC2, AWS Elastic Kubernetes Service (EKS), AWS Lambda, AWS RDS (Amazon Relational Database Service), AWS S3, AWS SageMaker (Amazon SageMaker)
SDK / API and Integrations	Api Gateway, AWS API Gateway
Scripting and Command Line Interfaces	Bash
Virtualization, Containers and Orchestration	Docker
Codecs & Media Containers	Ffmpeg

Version Control	Git
Operating Systems	Linux, Windows
Third Party Tools / IDEs / SDK / Services	MatLab
Other Technical Skills	Data Science, Statsmodels

EXPERIENCE

Lead Data Scientist

Jul 2022 - Present

Diabetic Retinopathy

Description: Medical project for classification and segmentation the fundus images for diabetic retinopathy signs.
Responsibilities:

- Initialized AWS Sagemaker infrastructure for continuous training pipeline of classification neural network;
- Reduced data preprocessing step time from 10 minutes to 4;
- Deployed custom JupyterLab server on the machine with datasets, that speed up access to the data twice and ease the process of data transformation with remote jupyter notebooks;
- Implemented image classification pipeline that employs EfficientNet architecture.
- Developed fully automated labeling infrastructure to manage image segmentation tasks for a team of 5 data annotators;
- Introduced image segmentation data-encoding method that reduced 60% of data transferring across API.

Technologies: AWS (Sagemaker, EC2), Tensorflow, OpenCV, Pandas, JupyterLab, Docker, Postman

Optical drone navigation

Description: At this stage the main task of the project is to create a solution, which will perform autonomous navigation of UAVs, using CV. This complex project consists of visual navigation, object detection, identification, tracking and UAV steering tasks.
Responsibilities:

- Research and analysis of different deep learning based techniques for the task of Single Object Tracking (SOT/VOT).
- Development of object tracking module based on solutions with neural networks;
- Development of object detection and identification modules;
- Creation and implementation of UAV steering algorithms.

Technologies: Python, PyTorch, Tensorflow, OpenCV, OpenMMLab, Docker

Spermatozoa tracking

Responsibilities:

- Writing commercial proposal;
- Doing preliminary research on what is possible to do and approximate methods.

Technologies: Python; Scikit-learn; OpenCV; Scikit-image; TensorFlow; AWS (Sagemaker, EC2, S3, Lambda, API Gateway, DynamoDB, RDS, EKS); methods: morphological operations, image binarization, classification, neural networks.

Hacking the Human Body

Description: Train a segmentation model on tissue samples obtained with certain methodology which would perform well on tissue samples obtained with a different methodology
Responsibilities:

- Researching existing methods;
- training a neural networks for the task.

Technologies: Python; PyTorch; TensorFlow; AWS (Sagemaker, EC2, S3, Lambda, API Gateway, DynamoDB, RDS, EKS); methods: neural networks (transformers, unet).

Room Flooring Design

Description: Develop a system which would replace the floor in an image with a given floor
Responsibilities:

- Design the pipeline of the system;
- develop a floor detection neural network;
- set the tasks and supervise the main team working on the project.

Technologies: AWS; Python; PyTorch; OpenCV; AWS (Sagemaker, EC2, S3, Lambda, API Gateway, DynamoDB, RDS, EKS); methods: projective transformation, neural networks.

Market state detection

Description: Based on historical prices of an asset (crypto or forex) determine the current general market state
Responsibilities:

- Design definition of market states;
- design algorithms for market state detection;
- deploy the system to work with live streams of data.

Technologies: SQL; Python; Numpy; Plotly, binance; Psycopg2; Scikit-learn; AWS (Sagemaker, EC2, S3, Lambda, API Gateway, DynamoDB, RDS, EKS); methods: linear regression.

Machine Learning Researcher

Jun 2019 - Jun 2022
Responsibilities:

- Researching and implementing computer vision techniques for eye-tracking, emotion recognition and attention measuring;
- implementing various statistical tests.

Technologies: Python; OpenCV; SQL; TensorFlow; PyMC3.

Machine Learning Engineer

June 2021 - June 2022
Responsibilities:

- Designing and implementing statistical testing for Reaction Time Testing;
- designing and implementing MaxDiff Analysis;
- improving a webcam based eye-tracking system;
- processing of eye-tracking results (smoothing, denoising, fixation and saccade detection).

Technologies: Python; OpenCV; SQL; TensorFlow; pymc3.

Machine Learning Engineer

June 2019 - June 2021
Responsibilities:

- Adapting eye-tracking system for mobile devices
- Developing an Emotion Detection system;
- developing an Attention Measuring system;
- data filtering of emotion and attention results (smoothing, outlier detection).

Technologies: Python; OpenCV; SQL; TensorFlow;

Research at Ulm University

March 2018 - November 2019
Responsibilities:

- Implementing Heath–Jarrow–Morton framework for simulating/predicting interest rate curves;
- implementing mortality rate prediction in an AM/EM setup.

Technologies: R; Monte Carlo simulations; Stochastic Processes; Statistics.

Lecturer at University

Sep 2020 - Present
Responsibilities:

- Teaching Machine Learning, Deep Learning, Computer Vision.

EDUCATION

Taras Shevchenko Kyiv National University, Ph.D., Machine Learning, Mathematics Ulm University, Master's degree in Actuarial Science

CERTIFICATES

- Deep Learning Specialization - Coursera
- Machine Learning - Coursera
- Finding structure in data - Coursera
- Training on labeled data - Coursera
- Math and Python for Data Analysis - Coursera
- Introduction to Deep Learning (with Honors) - Coursera
- TensorFlow in Practice Specialization - Coursera
- AI for Medicine Specialization - Coursera