EDUCATION

2022 (Distinction)
Queen's University Belfast
MSc Data Analytics/Science

2014
Hacettepe University
BSc Electrical and Electronics Engineering

SKILLS

- C/C++
- Python
- Gstreamer
- Git
- PyTorch
- Agile
- System/Software Design
- Docker/Kubernetes
- NVIDIA TensorRT
- NVIDIA DeepStream
- Linux
- Deep Learning
- Computer Vision
- Real-time Video Processing
- Microservices
- RabbitMQ
- REST APIs (Laravel/FastAPI/Swagger-Flask)
- CI/CD
- Bash
- PyTest/Tox
- CMake
- Static Analysis
- Leadership/Mentoring
- Sanitizers/Valgrind
- NVIDIA Triton
- Github Actions
- Unreal Engine

WEBSITE & PORTFOLIOS

www.tugayarslan.com
linkedin.com/in/tugayarslan
github.com/TugayArslan

TUGAY ARSLAN

+10 years of industrial experience solving variety of challenging problems, efficient and versatile, outside-the-box thinker. Highly motivated professional with experience in developing and managing software applications. Proven record of successful design and implementation of software solutions to streamline processes and improve productivity. Dedicated to take ownership and lead projects, organized and analytical, detail- and goal-oriented professional.

07/2022 - Present
Senior Software Engineer - AI/MLOps, Johnson Controls | Belfast

- Designed, developed and implemented high performance real-time video pipelines with deep learning backend utilizing NVIDIA GPUs. (C/C++)
- Delivered core AI capabilities, supporting microservices and integration with the rest of the product portfolio - edge, server and cloud (APIs, Docker/k8s and Python)
- Led end-to-end AI engine development, optimization, deployment and testing
- Ported AI capabilities to support edge AI in cameras utilizing Ambarella SOCs.
- Mentored newly hired software engineers through routine coaching and support.

11/2020 - 07/2022
Senior Software Architect - Design Engineer, Sensata Technologies | Antrim

- Leading system design for Sensata's next gen TPMS products based on BLE
- Leading analysis and initiation of RF and system level performance of BLE TPMS
- Submitted various invention disclosures during POC phase of the project
- Leading development of features for next gen TPMS products (ETFA, OTA Updates)
- Developed various tools (Python / R) to analyze/simulate system behaviour
- Agile Product Owner in cross-functional team, lead HW, embedded SW teams in various challenging customer projects (BMW, Ford, Renault).

03/2018 - 10/2020
Software Architect - Design Engineer, Sensata Technologies | Antrim

- Led passenger car (Geely, Volvo) and HVOR (BFDA, DFCV) projects, from initial requirement discovery through customer negotiation to delivery of the product
- Developed various configurations, simulation tools and test nodes on CANoe
- Designed TPM sensor model in Python to simulate the sensor and analyze RF collision statistics and Matlab scripts and GUIs to analyze system solutions
- Trained the less experienced teammates by leading requirements workshops and backlog refinements
- Provided my full support to develop mature test environment for verification team and influenced SW team to write high-quality user stories.

07/2016 - 02/2018
Team Leader of Electronics/Software System, Mikrosens Electronics | Ankara

- Led the design, production and development of one of the world's smallest thermal camera core with an electromechanical shutter and fully digital core by

PASSIONS

Data Science/Deep Learning
Simulation and Physics/Games
Robotics and UAVs
Web and I.T.

PUBLICATIONS & AWARDS

- Patent WO2023059860A1 - Tire fill assistance session control
- Patent US20230406262A1 - Wheel theft detection and notification using a tire pressure monitoring system
- Patent EP4033675A1 - Sensor auto-location using phased antenna array beamforming
- An advanced presence detection system using the CMOS Infrared (CIR) technology - SPIE / Proceedings (2017)
- Hacettepe University Faculty of Engineering's Competition 2014 (#1 Graduation Thesis/Project - Mini UAV Project)
- Hacettepe University Electrical and Electronics Eng. Competition 2014 (#1 Graduation Thesis/Project - Mini UAV Project)
- Middle East Technical University Robotics Days (UORG) 2014 (#2 in Innovative Category with Mini UAV Project)
- Istanbul Technical University Robotic Olympics (ITURO) 2012 (#2 in Innovative Category with Mini UAV Project)

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integrating/developing Mikrosen's first ASIC

- Led the design, production and development of USB thermal cameras, development kits, test systems, camera cores
- Led development of the cross-platform C++ API and Desktop Sofware
- Led technical contributions for HW/SW and System Design of LWIR Module (multi-array camera) in SEERS (EU's Horizon 2020), working with 7 partners in Europe
- Developed C++ API including image correction algorithms to enhance partner's capability to detect ships, boats on the water from the air on a drone
- Managed a team of 2 Electronics System Engineer, 1 SW Engineer and 1 Optics Engineer while directly reporting to Engineering Director

12/2014 - 06/2016

Electronics/Software Engineer, Mikrosens Electronics | Ankara

- Designed mixed-signal rigid-flex PCBs (ARM Cortex-M) for thermal cameras
- Designed universal motherboard, sensor boards for each imager in an automated test setup and small form factor universal development kit for the customers
- Responsible for firmware development for ARM based solutions in C
- Developed CMS (Content Management System) using PHP, MYSQL, JS to manage inventory and to store/display die/wafer, PCB and camera level test results
- Developed .NET desktop API to connect test and production systems to CMS and .NET C# applications for internal systems such as PCB Test SW, Die Level Test SW.

CERTIFICATIONS

- Certified Kubernetes Application Developer
- K8s for Developers, Pluralsight, 2024
- Docker and k8s: The Big Picture, Pluralsight, 2024
- Getting Started with Docker, Pluralsight, 2024
- Getting Started with k8s, Pluralsight, 2024
- Unreal Engine C++ Developer, Udemy, 2022
- Int. to Deep Learning with Torch, Datacamp, 2022
- Int. to Deep Learning in Python, Datacamp, 2022
- Machine Learning in Python, Datacamp, 2022
- Linear Classifiers in Python, Datacamp, 2022
- Supervised Learning scikit-learn, Datacamp, 2022
- Master C++ Programming, Udemy, 2021
- Supervised Learning in R Classification, Datacamp, 2021
- Supervised Learning in R Regression, Datacamp, 2021
- Unsupervised Learning in R, Datacamp, 2021
- Working with Data in Tidyverse, Datacamp, 2021
- Cleaning Data in Python, Datacamp, 2021
- Int. to Text Analysis in R, Datacamp, 2021
- Building Web Apps with Shiny, Datacamp, 2021
- Int. to Data Viz. with ggplot2, Datacamp, 2021
- Sentiment Analysis in R, Datacamp, 2021
- Text Mining with B-of-W in R, Datacamp, 2021
- Pandas Foundations, Datacamp, 2021
- OOP in Python, Datacamp, 2021
- Introduction to SQL, Datacamp, 2021
- Intermediate Python, Datacamp, 2021
- Introduction to Python, Datacamp, 2021
- Introduction to Data in R, Datacamp, 2021
- Introduction to the Tidyverse, Datacamp, 2021
- Intermediate R, Datacamp, 2021
- Introduction to R, Datacamp, 2021
- Exploratory Data Analysis in R, Datacamp, 2021
- Machine Learning, Coursera (by Stanford Uni.), 20
- ASPICE - Sys. Design & SW, Sensata, 2019-2020
- Enterprise Architect and UML, Hippo Software, 20
- FMEA, Apis-IQ, 2018
- CMP684 Neural Networks, Hacettepe Uni. CS Gra 2017-2018
- CMP717 Image Processing, Hacettepe Uni. CS Gra 2016-2017
- EE586 Artificial Intelligence, METU EEE Graduate, 2015-2016
- RESTful API with Laravel 5, Udemy, 2015