Kıvanç Şerefoğlu

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EDUCATION

Illinois Institute of Technology Chicago, IL, USA
Master of Computer Science Sep 2025 – Present
Courses**:** Machine Learning, Cloud Computing, Game Theory

Ozyegin University Istanbul, Turkiye
B.Sc. Computer Science Sep 2019 – Jun 2024
Courses: Introduction to Artificial Intelligence, Introduction to Deep Learning, Analysis of Algorithms

TECHNICAL SKILLS

Programming Languages: Python, Java, C++, C#, SQL
AI & Machine Learning: PyTorch, TensorFlow, scikit-learn, Large Language Models (LLMs), Natural Language Processing (NLP), Multi-Agent Systems, Time-Series Forecasting
AI Engineering: LangChain, Model Context Protocol (MCP), LLM application development
Backend & Databases: Spring Boot, .NET, REST APIs, PostgreSQL, MSSQL
Robotics & Systems: ROS2, Linux
Frontend & Application Development: React
Cloud, DevOps & Collaboration: AWS (EC2, S3), Docker, Git, Bitbucket, Jira, Confluence

EXPERIENCE

The Robotics Lab, Illinois Institute of Technology Chicago, IL, USA
Research Assistant (Graduate Researcher) Feb 2026 – Present

- Developed and deployed an end-to-end autonomy stack on NVIDIA Jetson, integrating machine learning models into real-time UAV decision-making workflows.
- Designed a modular AI framework with plug-and-play prediction models, real-time validation, and DJI Payload SDK integration for onboard flight decisions.
- Built and benchmarked three ML-based trajectory prediction variants, achieving approximately 1 ms inference latency with a 20M-parameter model.
- Optimized the ML and control pipeline to execute each 0.1-second simulation step in approximately 30 ms and complete a full model predictive control cycle in approximately 1 second.
- Evaluated model reliability and system performance across approximately 4,500 simulated UAV flights, including controlled wind-robustness experiments across multiple wind directions.
- Collaborated within a five-person robotics research team under Prof. Matthew Spenko to integrate ML inference, ROS2 communication, flight-control software, and model predictive control.

Management Solutions Istanbul, Turkiye
IT Consultant Apr 2025 – Sep 2025

- Analyzed terabyte-scale financial and risk datasets for a leading Turkish private bank using SQL, identifying data quality issues, inconsistencies, and recurring error patterns.
- Performed root-cause analysis on data discrepancies and translated findings into validation rules, supporting reliable reporting and BCBS 239 compliance.
- Developed SQL-based data quality checks, reconciliation workflows, and validation pipelines for large-scale banking datasets.
- Automated manual data validation processes, increasing validation coverage from approximately 20% to 90%.
- Partnered with data governance and business teams to investigate anomalies, document findings, and improve the accuracy and consistency of critical datasets.

UniPool Istanbul, Turkiye
Co-Founder Oct 2023 – Jul 2025

- Co-founded and launched a cross-platform university ride-sharing application for iOS and Android, growing the platform to more than 500 student users.
- Owned backend services and cloud infrastructure, deploying and managing application workloads on AWS EC2 and S3.
- Contributed to the application's Flutter-based architecture and Supabase integration, supporting authentication, data management, and core ride-sharing workflows.
- Led product execution within a seven-person cross-functional team, coordinating engineering priorities, task planning, testing, and releases.
- Worked directly with users to gather feedback, improve product features, and drive adoption across the university community.

BSH (Bosch & Siemens) Istanbul, Turkiye
Software Engineer Sep 2023 – Jun 2024

- Developed an internal web platform using C# and .NET, enabling R&D teams to present, manage, and track departmental projects.
- Designed and maintained MSSQL database structures, queries, and backend workflows supporting core application functionality.
- Improved database performance and reliability through query optimization, indexing, and schema normalization.
- Collaborated in an Agile engineering environment, contributing to code reviews, feature development, testing, and application integration.

Arcelik Istanbul, Turkiye
Software Engineer Intern Jul 2023 – Sep 2023

- Developed a full-stack asset management application using React and Spring Boot, enabling internal teams to securely track and manage company assets.
- Designed and implemented RESTful APIs and backend services integrated with an MSSQL database.
- Added JWT-based authentication and authorization to protect application data and user access.
- Applied modular software architecture, version control, and enterprise development practices to improve maintainability and scalability.

Ozyegin Industry 4.0 Lab Istanbul, Turkiye
Research Assistant Jul 2022 – Sep 2023

- Collected, processed, and analyzed sensor and operational data from Automated Guided Vehicles (AGVs) and warehouse robots using Python, pandas, and NumPy.
- Developed Python-based data pipelines for sensor processing, performance monitoring, and optimization of industrial robotic systems.
- Contributed to Cyber-Physical Systems (CPS) and automation projects by integrating software components with AGVs, Industrial Internet of Things (IIoT) devices, and manufacturing systems.
- Designed and maintained databases supporting the reliable collection, storage, and analysis of IIoT data.
- Applied data-driven analysis to identify operational inefficiencies and support digital transformation initiatives for Small and Medium-sized Enterprises (SMEs).

Ozyegin University Istanbul, Turkiye
Promotion Team Member Jun 2022 – Aug 2022

- Promoted the university to prospective students and participated in outreach activities.
- Selected for the role based on academic success and strong communication skills.

PUBLICATIONS

RTF: Reputation-Based Team Formation for Enhancing Dependable Critical Fully Autonomous Multi-UAV BVLOS Operations
First Author — PAIS 2025
Proposed and evaluated a dynamic, Byzantine-resilient reputation algorithm for trustworthy team formation in autonomous multi-UAV Beyond Visual Line of Sight (BVLOS) missions.

UAV Marketplace Simulation Tool for BVLOS Operations
First Author — AAMAS 2025, Demonstration Track
Developed a configurable Java-based multi-agent simulation platform for evaluating UAV team-formation strategies under adversarial conditions.

PROJECTS

UMS-SIM — UAV Marketplace Simulator 2024 – 2025
- Built a Java-based multi-agent simulator for BVLOS missions with configurable adversarial behavior and CSV metrics export.
- Demonstrated at AAMAS 2025 (demo track, first author).

FinS2IP-LLM — Semantic-Prompted Financial Forecasting with LLMs Nov 2026
- Designed and trained an LLM-based time-series forecasting architecture in PyTorch, integrating semantic prompts and multi-channel financial indicators.
- Built automated data pipelines that improved S&P 500 forecasting stability and performance.

Resume Optimizer — Claude Code Plugin Jul 2026
- Built and published a Claude Code skill/plugin that tailors a resume to a specific job description under strict non-fabrication rules, with factual validation, job-match scoring, and ATS-friendly PDF export.
- Repo doubles as its own plugin marketplace: github.com/KivancSerefoglu/resume-optimizer.

MERIDIAN — AI Portfolio Optimization ScarletHacks 2026, Illinois Tech
- Built an AI-driven portfolio optimization tool in Python at the ScarletHacks 2026 hackathon.

Personal Website — kivancserefoglu.com 2026
- Designed, built, and deployed a personal portfolio site (static HTML/CSS/JS, Cloudflare Pages).

Industry 4.0 Lab Summit, Özyeğin University Istanbul, Turkiye
Team Leader Nov 2022
- Led a 13-member team to design and present automation and digital transformation solutions at the Industry 4.0 Lab Summit.
- Coordinated project planning, task distribution, and technical integration across robotics, IoT, and database systems to showcase innovative applications.
- Delivered a successful presentation that demonstrated practical Industry 4.0 solutions to academic and industry participants.

CERTIFICATIONS

- First Place in Mathematics — XII International Science Quiz (international competition)
- Ethical Leadership Academy certificate, EDMER
- UN Refugee Problem and Solutions Project

EXTRACURRICULAR ACTIVITIES

- **Turkish Student Association, Illinois Institute of Technology** 2025
  Board Member
- **Engineering Club, Ozyegin University** 2022
  Board Member
- **Science Club, Ozyegin University** 2021
  Board Member

- **Fenerbahce Sports Club & High School Team** 2016 – 2018
  Basketball Player