KADİR ERTÜRK

AI & Software Engineer | Mobile Development Lead

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PROFESSIONAL PROFILE

AI engineer and mobile development lead with over 30 years of hands-on engineering experience — from scientific computing and signal processing at Istanbul Technical University to building and shipping production AI systems in Canada. Holds an M.Sc. in Geophysics from İTÜ and a B.Sc. in Geophysics from Yıldız University. Served as Research and Teaching Assistant at İTÜ, completed all doctoral coursework, and holds a granted patent in AI-based sensing. Co-founder and Technical Director of sysHuman Technologies Inc. (Vancouver), delivering LLM and computer-vision powered mobile and web products. Led mobile engineering teams at 4Refuel. Presented AI/ML internally at Intel Canada. Produces Turkish-language science and technology content on YouTube.

PATENT & SCIENCE COMMUNICATION

Patent: Method and Apparatus for Detecting Color (Hair Color Detection Widget) — AI-based hardware/software system using machine learning for real-time color classification via light sensor. Granted patent.

YouTube Channel — Turkish Science & Technology Communication: youtube.com/@KadirErturk

- Produces original Turkish-language (and some English) deep AI and science education content — topics go well beyond introductory level into mathematical foundations
- AI & Deep Learning series: Transformer Architecture & Self-Attention (how it works, mathematical build-up), Attention mechanism — query/key/values explained, Backpropagation (simplified and full derivation), Neural Network fundamentals, Feature Vectors, Embedded Layer (Turkish + English)
- Mathematics for ML: Matrices, Eigen Vectors and Eigen Values, Differential (difference) equations, Differential calculus foundation
- Applied ML series: LSTM with stock price prediction (7K views), Reinforcement Learning — Q-Learning with example (2.5K views), Yapay Zeka ile canlı yaratmak (Creating life with AI) parts 1 & 2, Yapay Zeka yöntemleri ile kur tahmini (4.3K views)
- Biology & science: Hücreleriniz Neden İntihar Ediyor? (Why do your cells commit suicide? — Apoptosis, 5 days ago), Ölümün Mimarları (Architects of Death), DNA — writing code on DNA
- Tools: Yapay Zeka ile Türkçe komutları yazıya çeviren uygulama (AI Turkish speech-to-text app, 7 years ago — early LLM work), sensor hardware demos
- Current production: full AI-generated Apoptosis science documentary — Veo 3 generative video, scripted and narrated by Kadir in Turkish

EDUCATION

Ph.D. in Engineering Sciences — All Coursework Completed (ABD) 1990 – 1992
Istanbul Technical University (İTÜ) — Geophysical Engineering

- Completed all doctoral coursework and examinations — thesis in preparation
- Engineering focus: advanced signal processing, numerical methods, neural network modelling, scientific computing

M.Sc. in Engineering — Geophysical Engineering 1988 – 1990
Istanbul Technical University (İTÜ)

- Applied engineering mathematics: 2D/3D signal and image processing, Fourier/Laplace/Z transforms
- Scientific programming in Fortran and C/C++ for geophysical data analysis

B.Sc. in Engineering — Geophysical Engineering 1984 – 1988
Yıldız University

- Foundation in engineering mathematics, physics, earth sciences, and numerical computation

iPhone Development 2011
British Columbia Institute of Technology (BCIT)

- iOS application development — Objective-C, Xcode, App Store deployment

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ACADEMIC & TEACHING EXPERIENCE

Research Assistant & Teaching Assistant 1989 – 1992
Istanbul Technical University — Engineering Faculty

- Delivered supplementary engineering lectures to undergraduate students in geophysics and scientific computing
- Assisted professors in research projects; published peer-reviewed articles in academic journals
- Developed scientific software for 2D/3D signal and image processing (Fortran, C/C++)
- Administered and supervised examinations; mentored students in numerical methods and engineering mathematics

Internal AI/ML Presentations — Intel Canada:

- Delivered internal technical presentations on Machine Learning to engineering teams at Intel Canada (2016–2018)
- Topics: ML architectures for wearable sensing, BLE sensor data classification, activity recognition pipelines

Proposed Teaching Areas:

- Applied AI & Machine Learning — hands-on, step-by-step: from data to deployed model (practical how-to focus)
- Deep Learning & Transformer Architectures — mathematical foundations, attention mechanisms, self-attention, positional encoding, encoder-decoder design (rigorous theoretical depth)
- Software Engineering and Object-Oriented Programming (Java)
- Mobile Application Development — iOS and Android (native and cross-platform)
- Embedded Systems and Internet of Things (ESP32, BLE, sensors)
- Signal Processing and Scientific Computing

PROFESSIONAL EXPERIENCE

Co-founder & Technical Director — AI Products 2023 – Present
sysHuman Technologies Inc. — Vancouver, Canada

- sysMirror (mirror.syshuman.com) — Production LLM + computer-vision platform for 4-in-1 beauty analysis (skin, hair, makeup, outfit); live on iOS, Android and web; token-based monetisation ($2.99/25 tokens); Studio section for AI digital transformations using SDXL inpainting and IP-Adapter FaceID on NVIDIA RTX GPU
- salon.syshuman.com — B2B AI skin analysis platform for beauty salons; professional PDF reports, multi-branch management, pay-per-token model; Groq and Ollama backends; multilingual (Turkish/English); PHP/MySQL stack
- quake.syshuman.com — AI-based earthquake prediction research platform applying machine learning models to seismic signal data
- image.syshuman.com — Self-hosted beauty transformation API: SDXL Inpainting + BiSeNet segmentation + BeautyGAN + IP-Adapter FaceID on RTX 4070Ti server
- Built automated AI content generation and publishing pipeline on Ubuntu 24.04 using Claude Code and cron for Instagram and TikTok
- Implemented StoreKit 2 (iOS consumable IAP) and Google Play Billing Library (Android); multiple App Store review rounds resolved
- Led cross-functional founding team (Canada + Turkey) across product, mobile, finance, and operations

Senior Software Engineer — Mobile Team Lead March 2019 – August 2026
4Refuel — Surrey, British Columbia, Canada

- Led the mobile engineering team developing enterprise Android application for fleet fuel management operations across Canada
- Engineered Android application using MVVM architecture, RxJava2, Retrofit, and Room
- Designed and implemented proprietary LCR/LCP communication protocol in Java with CRC16 verification layer for hardware integration
- Built real-time BLE communication bridge between Android devices and IoT fuel dispensing hardware in the field
- Defined technical architecture, reviewed code, and mentored junior mobile developers; held internal engineering seminars

Mobile & Web Application Developer Aug 2018 – Mar 2019
FreeEstimation.com — Vancouver, Canada

- Full-stack development of contractor-customer matching platform: web application, Android app, REST APIs
- Launched on Google Play and Apple App Store

Android Developer — AI/ML & Wearables Oct 2016 – Jul 2018
Intel Corporation — Vancouver, Canada

- Developed Android application for Intel Vaunt — Intel's publicly announced smart glasses project (The Verge, February 2018), one of Intel's most high-profile consumer hardware R&D projects
- Implemented BLE GATT communications between Android and the smart glasses hardware; built MVP architecture with Dagger dependency injection and EventBus for real-time multi-device sensor fusion
- Worked within Intel's advanced hardware division on wearable AR device software, contributing to gesture and sensor interaction layers
- Presented internal ML sessions to engineering peers on machine learning applications in wearable sensing: activity recognition via BLE sensor data, SVM-based signal classification, and real-time ML inference on mobile
- Gained deep exposure to Intel's hardware-software co-design process at the intersection of embedded systems and mobile AI

Senior Software Developer / Backend AI Developer Aug 2011 – Jul 2016
Prizm Media Inc. — Vancouver, Canada

- Designed and trained SVM (Support Vector Machine) model for real-time human activity recognition — deployed in KudoLife iOS/Android app
- Applied Neural Networks to user behaviour classification from mobile sensor data streams
- Built lead management and automation platform in Java (SmartGWT), PHP, MySQL serving call-room operations at scale
- Redesigned database schema for high-throughput performance; integrated web services for full-process automation

Android & Mobile Developer Jan 2013 – Feb 2014
Golaks — North Vancouver, Canada

- Published Fourier Transform Android app (real-time FFT audio signal analysis) — 3,000+ downloads on Google Play
- Developed ChatterPro in collaboration with UBC Mechatronics Division: real-time vibration/chatter detection using signal processing
- Built TraceMe V2: GPS location tracking app with push notifications, in-app billing, and REST web services (iOS + Android)

Database & Mobile Developer Jan 2010 – Aug 2011
Golaks.ca — North Vancouver, Canada

- Developed winemaker production management software in MySQL/PHP with full web interface
- Published TraceMe on App Store and Android Market — GPS location tracking with XML/PHP/MySQL backend

System Analyst, Database Architect & Software Developer Jan 1994 – Jan 2009

Golaks Software — Istanbul, Turkey

- Founded company; built production automation software for the Turkish leather manufacturing industry
- System became the industry standard with 120+ worldwide customers — covering warehouse management, order tracking, point-of-sales, and accounting in a single integrated platform
- Designed and implemented full business process automation: barcode-driven data collection, automated order flow, real-time inventory tracking, and integrated reporting
- n-tier architecture connecting local applications with internet-facing systems; continuous improvement based on customer feedback across 15 years

Computer Programmer — Embedded Systems Jan 1992 – Jan 1994

Exim Ltd — Istanbul, Turkey

- Wrote barcode data collection applications in ANSI C / C++ for handheld computers
- Delivered embedded solutions for major enterprise clients including Coca-Cola, Philips, and Levi's

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TECHNICAL SKILLS

AI / LLM: Large Language Models, Groq API, Claude API (Anthropic), Ollama, LangChain, Prompt Engineering, RAG pipelines, LLMOps

Machine Learning: Neural Networks, SVM, LSTM, deep learning, Transformer architecture, activity recognition, computer vision, FaceID

GPU / Inference: NVIDIA CUDA, RTX 3060/4070Ti, GPU-accelerated inference, Ubuntu 22/24 server administration

Mobile: Android (MVVM, RxJava2, Retrofit, Room, BLE/GATT, StoreKit 2, Google Play Billing), iOS (Swift, Objective-C, Xcode)

Backend: Java, Python, PHP, REST API design, SmartGWT, Yii Framework, Node.js, Apache

Web: HTML/CSS, JavaScript, jQuery, AJAX, React (Tailwind CSS)

Databases: MySQL, SQLite, Room, Firebird, Interbase, PostgreSQL — DDL/DML, stored procedures, triggers, replication

Embedded / IoT: ESP32, BLE (GATT), RF circuit design (ADF4351, NanoVNA V2), light sensors, barcode (ANSI C), Fortran, C/C++

Signal Processing: Fourier/Laplace/Z transforms, 2D/3D image processing, real-time audio/vibration analysis

DevOps / Tools: Linux (Ubuntu), Git, Docker basics, Claude Code, cron, VS Code, Android Studio, Xcode

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NOTABLE PROJECTS & RESEARCH

- sysMirror (mirror.syshuman.com) — Live LLM + CV beauty analysis platform, iOS/Android/web — skin, hair, makeup, outfit analysis
- salon.syshuman.com — B2B AI skin analysis SaaS for beauty salons with PDF reporting and multi-branch support
- quake.syshuman.com — AI earthquake prediction research: ML applied to seismic signal datasets
- image.syshuman.com — Self-hosted GPU beauty transformation
- YouTube Turkish ML Education (youtube.com/@KadirErturk) — 7+ years of deep AI/ML content in Turkish: Transformer & Self-Attention, Backpropagation, LSTM, Q-Learning, Eigen Vectors, Feature Vectors, Embedded Layer; applied series with LSTM stock prediction (7K views), RL Q-Learning (2.5K), AI-based FX prediction (4.3K)
- Apoptosis Science Documentary — Full AI-generated Turkish-language science documentary in production using Veo 3 generative video, voiced by Kadir
- Intel Vaunt Smart Glasses — Android BLE developer on Intel's publicly announced AR wearable (The Verge, Feb 2018)
- Fourier Transform Android App — 3,000+ downloads; real-time FFT audio signal visualisation
- ChatterPro — R&D project with UBC Mechatronics Division on real-time vibration chatter detection
- Hair Color Detection Widget — Granted patent: ML-based colour classification using light sensor hardware

LANGUAGES & CITIZENSHIP

Turkish: Native
English: Professional fluency — 25+ years in Canada
Citizenship: Canadian and Turkish (dual citizen) — no work permit required in Turkey