Kiran De Roy

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Education

KAMSA Aarschot   Sept 2014 – June 2020
Science and Mathematics

KU Leuven: Group T   Sept 2020 – Feb 2025
BSc in Electronics-ICT: Smart Electronics and Software

- Coursework: Operating Systems, Object-Oriented Programming, Web Development

KU Leuven: Group T   Sept 2024 – June 2025
MSc in Electronics-ICT: Software Systems

- Coursework: C++, Machine Learning, Cybersecurity, Distributed Systems

Experience

Student Job, Delhaize   July 2019 – July 2021

- Operated the cash register
- Restocked shelves

Research

Master's Thesis – Real-Time Pelvic Rotation Detection Using Machine Learning   Sept 2024 – June 2025

Developed machine learning models for real-time pelvic rotation detection to address lower back pain, achieving 95% weighted F1-score using MS-TCN++ temporal model on IMU sensor data.

Technologies: Python, Scikit-learn, Pandas, NumPy, Tensorflow, PyTorch, CUDA

Supervisor: *Bart Vanrumste*
Daily Supervisor: *Meixing Liao*
Collaborator: *Stijn Avaux*

Projects

Automatic Chessboard with Lichess Integration   Source Code

- Built an automatic chessboard powered by ESP32-S3 using CoreXY mechanism and electromagnets
- Integrated with Lichess API via React web app
- Tools: ESP-IDF (C), React, Stepper Motor Drivers, CoreXY Kinematics

Student Freelancing SaaS Application: UniGigs   Source Code

- SaaS web app for students to offer and find freelance gigs
- Authentication, file storage via Firebase, payments via Stripe
- Tools: React, TypeScript, Firebase

Distributed Food Ordering System   Source Code

- Microservices-based food ordering platform with 2PC transactions
- Designed REST APIs, monitoring services, deployed to Azure
- Tools: Java, Spring Boot, REST APIs, Maven, Azure, GitHub Actions

Technologies

Languages: Java, C++, C, PHP, SQL, JavaScript, Python
Technologies: Symfony, Git, React, Firebase, QTCreator, Tensorflow