

APPRENTICE ENGINEER COMPUTER SCIENCE & 3D ENGINEERING

Work-study engineer at SNCF · open to opportunities

Tom Wambeke

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PROFILE

Engineering student at ESIEE Paris specialising in Computer Science, 3D Engineering and Media Technology. Hands-on experience in machine learning, signal processing and full-stack development through work-study contracts at SNCF. Currently on a work-study contract and open to opportunities on ambitious, interdisciplinary projects.

WORK EXPERIENCE

SNCF — AEF	Sept. 2024 – Oct. 2024 · Mai 2025 – Juil. 2025
Apprentice Engineer — Data Science & Signal Processing	
- Designed, trained and validated a Convolutional Neural Network (CNN) for real-time signal classification in Matlab — operational model with strong accuracy. - Investigated parameters influencing fine particle emissions from train brake systems using linear regression, OLS and fuzzy logic models. - Applied machine learning and deep learning methods (scikit-learn, PyTorch) to identify the most influential physical parameters.	

PROJECTS

IoT Web Application — SNCF	2024–2025
Full-stack Developer	
- Built a sensor data visualisation platform with Angular, Node.js/Express and Highcharts dashboards. - Containerised services with Docker Compose, set up GitLab CI/CD pipelines and implemented an alert management system.	
Personal Finance App (MVP)	2024–2025
Solo Developer — FastAPI / PostgreSQL / React	
Budgeting tool for freelancers — CSV/OFX import, REST API, freemium model. Deployed on Hetzner VPS via Docker.	
3D Graphics & Geometric Modelling	2024–2025
Academic — OpenGL / C++	
- Implemented OpenGL rendering pipelines and a half-edge data structure for mesh operations (silhouette detection, triangulation, normal computation). - Applied Catmull-Clark subdivision algorithm with full vertex/edge/face analysis.	
Dynamic Programming Algorithm	2023–2024
Python & Java — Academic	

EDUCATION

ESIEE Paris
MEng Computer Science
3D Engineering & Media Tech
Work-study track
2022 – 2027
Heriot-Watt University Malaysia
International academic semester
2026
Lycée Clément Ader
Baccalauréat — Mention Bien
Maths · Physics · Engineering
2022

TECHNICAL SKILLS

LANGUAGES	
Python · C++ · Java · Javascript	
SQL · TypeScript	
ML / DATA	
PyTorch · TensorFlow	
scikit-learn · Pandas · NumPy	
BACKEND / INFRA	
FastAPI · Node.js · PostgreSQL	
Docker · GitLab CI	
GRAPHICS	
OpenGL · Geometric Modeling	
LANGUAGES	
French	803 Voltaire score
English	850 TOEIC score
SOFT SKILLS	

- Developed and benchmarked a dynamic programming solution in Python and Java with full written analysis.

Analytical mindset

Autonomous & rigorous

Team collaboration

Fast learner

INTERESTS

Swimming · Running · Cycling

Automotive engineering

Open-source development