JANSOBUS.COM

CONTACTS

sobus.jan@gmail.com

+61 434 848 648

Poland/Australia,
EU citizen, happy to relocate

Jan Sobus

SKILLS

- **Generative AI:**
  - LangChain, LangGraph
  - Vector and Graph DBs, RAG
  - Agentic systems - PydanticAI
  - Local models and cloud models
  - No-code solutions (N8N)
- **Deep learning:**
  - PyTorch
  - Tensorflow + Keras
  - Hugging Face
  - Fast.ai
- **APIs, messaging and UI**:
  - FastAPI
  - Flask
  - Streamlit
  - gRPC
  - MQTT/AMQP
- **Containerization and CI/CD:**
  - Docker
  - Azure Pipelines
  - GitHub actions
  - Kubernetes
- **Cloud:**
  - Azure
  - AWS
  - Databricks
- **Data analysis and ML:**
  - Pandas/Numpy
  - Scikit-learn
  - XGBoost
  - SciPy
- **Visualization:**
  - Seaborn
  - PowerBI
- **Project management:**
  - Git + GitHub
  - Jira
  - Azure DevOps
- **Storage**
  - Postgres
  - Redis
- **Other languages:**
  - C
  - R
  - MATLAB
  - HTML + CSS

JAN SOBUS, PHD

ML ENGINEER, ARCHITECT, RESEARCHER

Experienced software and AI architect with research background and wide scope of experience that spans domains of machine learning, software engineering, data science and physics. I combine strong theoretical skillset with developer experience in production environments. My goal is to provide tailored data-science and AI platforms that provide environment for solution development of any scale.

INDUSTRY EXPERIENCE

PRINCIPAL APPLIED AI SCIENTIST

February 2026 – Now

ORACLE – REMOTE, AUSTRALIA

At Oracle I am designing and building a new multi-agent AI platform for healthcare. My main responsibilities focus around building platform for seamless integration of Skills and MCP tools — enabling agents to discover, call, and compose external capabilities securely and reliably.

- Architecting the agent-skill-tool composition layer: secure capability discovery, cross-agent orchestration, and privacy-preserving tool calls in a multi-tenant environment.
- Contributing features to the open-source Oracle OCI SDK

DATA SCIENCE ARCHITECT

September 2023 – January 2026

CATERPILLAR OF AUSTRALIA – BRISBANE, AUSTRALIA

In the architect role I was designing deployment patterns, architecture and coding standards for ML components to be developed by multiple Data Science teams across the enterprise. I was also helping with exploration of new areas of artificial intelligence (Adaptive Reinforcement Learning, Agentic Systems).

- Delivered custom-built AI toolset for developers that sped up feature delivery by 30%. Designed a full end-to-end agentic system for project management.
- Designed and built a mine digital twin platform that enables quick prototyping of data science models, while using same interfaces to communicate with field/simulators as the production infrastructure – FastAPI + Docker + Redis + PostGIS

DATA SCIENCE TEAM LEAD

December 2021 – September 2023

CATERPILLAR OF AUSTRALIA – BRISBANE, AUSTRALIA

Led a team of five Data Scientists that provided analytical and machine learning solutions for the software Caterpillar software and product teams

- Designed and built a novel assignment engine for optimizing mine operations by using ensemble of ML models from different families (supervised learning, unsupervised learning, reinforcement learning) opening way towards use of electric fleets in Caterpillar products.
- Performed the consolidation and migration of Data Science codebase into Azure Repos and developed automated Azure build pipelines that reduced delivery time to engineering teams by 70%.

MACHINE LEARNING SOFTWARE ENGINEER

July 2020 – October 2021

EXCI.AI – MAROOCHYDORE, AUSTRALIA

At EXCI.AI I was part of the team that has built a system for early fire detection based on ground and satellite data. I was responsible for machine learning component of the system, which has reached capacity to detect fires up to 10 km from the camera in less than 3 minutes and pinpoint them on the map.

- Built a multi-model machine learning pipeline for smoke detection in near-real time.
- Successfully integrated gigabytes of data from land cameras, satellites and external data streams.
- Implanted the complete ML solution into the AWS hosted production system based on custom-built microservices connected with message queues and RESTful APIs.

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LANGUAGES

- English
- Polish
- German
- Norwegian

REFERENCES

Available upon request

ACADEMIC CAREER

POSTDOCTORAL RESEARCH FELLOW
2016 – 2021

UNIVERSITY OF QUEENSLAND - AUSTRALIA

At the University of Queensland, I worked in the novel field of Light Emitting Field Effect Transistors and Organic Lasers, which aim to offer tunability, flexibility and cost efficiency unavailable in contemporary, inorganic counterparts. I combined the laboratory work using world-leading equipment with solid theoretical background to provide insight into uncharted scientific areas.

Major accomplishments:

- Multiple publications in the top journals, including Nature group
- Major breakthroughs in understanding of requirements for injection lasing in organic materials.
- Coordination of multiple research projects and multidisciplinary teams of physicists, chemists, engineers and software developers.

PHD IN PHYSICS
2013 – 2016

ADAM MICKIEWICZ UNIVERSITY – POLAND

EPFL - SWITZERLAND

My PhD project was focused on development of novel hybrid organic-inorganic solar cells (Dye Sensitized Solar Cells). It consisted all the steps, from electrode pattern and nanostructure design, optimization of dye loading to electronic and optoelectronic evaluation of performance of complete devices down to femtosecond range. In addition, I designed the mathematical model of tandem solar cells and implemented it in C.

Major accomplishments:

- PhD obtained in under 3 years, with the top GPA in the cohort
- 6 Publications in major international Journals – IF > 5
- Invited research stay in the top group in the world – Michael Graetzel lab at EPFL

BSC AND MSC IN APPLIED PHYSICS
2007 – 2012

GDANSK UNIVERSITY OF TECHNOLOGY – POLAND

NTNU - NORWAY

During my undergrad and master studies, I focused on understanding and development of novel carbon-based nanomaterials (graphene and its derivatives). I did my master project in Norway, where I worked on development of nanocomposite electrode material for lithium batteries.

Major accomplishments:

- Science scholarships from the Ministry of Science and Education, and President of Gdansk
- Chairman of the Student Circle of Material Science and active member of the Student Circle of Physics, co-organizer of the Baltic Festival of Science
- Participant in 5+ national and international conferences with presentations and posters

ACADEMIC ACCOMPLISHMENTS

- **Track record:** Over 15 scientific papers in high impact scientific journals (Nature Communications, Advanced Functional Materials, Advanced Optical Materials, ACS Photonics) with 900+ citations and H-index of 18.
- **Project management:** Collaboration in five international research projects with joined forces of institutions from Australia, India, Japan, Switzerland and Poland. Now I'm coordinating teams from US, Canada and India on a daily basis.
- **Team growth & supervision:** I supervised two PhD students as well as coordinated several short projects for the undergrads. Now I'm leading a team of data scientists and ML engineers, collaborating with software and devops engineers on multiple customer-facing projects.