



Stefan Seman

ML Engineer | Data Scientist | PhD Researcher

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PROFESSIONAL SUMMARY

ML Engineer, Data Scientist, and PhD Researcher with a strong background in higher education and published research. Specialize in machine learning, AI, generative AI, and software development, with unique expertise bridging data science and biomedicine. Analytical thinker with a pragmatic problem-solving approach and excellent communication skills.

Core Focus: LLMs, RAG Systems, Software Development, Document Intelligence

TECHNICAL SKILLS

Languages

Python, SQL, Bash, LabVIEW

AWS Cloud

Lambda, S3, ECS, EC2, Step Functions, Bedrock

Databases

DynamoDB, PostgreSQL, Redis, Pinecone, Milvus, PgVector

Frameworks

FastAPI, Flask, PyTorch, PySpark, LangChain, LlamaIndex, Transformers

Azure Cloud

Data Factory, Synapse, DevOps, Functions, Azure Search, Azure OpenAI, Data Lake, Databricks

Tools

Docker, Git, Grafana, Jenkins

PROFESSIONAL EXPERIENCE

Senior ML/AI Engineer & Data Scientist

Mar 2023 - Present

Brainiac

- Implemented RAG pipelines and AI agent frameworks for knowledge automation and decision support
- Built scalable data ingestion, preprocessing, and inference pipelines for production environments
- Worked on cloud-native infrastructure on AWS to support secure and scalable deployments
- Collaborated with cross-functional teams and stakeholders to translate business requirements into production AI systems
- Stack:** Python, AWS, ML, RAG, AI Agents

Senior Machine Learning Engineer & Software Engineer

Oct 2024 - Present

404 Solutions

- Designed and operated multi-tenant AI systems for enterprise clients
- Delivered document intelligence solutions for automated extraction, classification, and summarization
- Built scalable cloud workflows on AWS (S3, Step Functions, Bedrock, APIs) supporting multiple organizations
- Deployed, monitored, and maintained production systems across distributed client environments
- Stack:** Python, AI Agents, FastAPI, RAG

Senior Machine Learning Engineer	Oct 2024 - Present
Provectus Inc. - Contract	
<ul style="list-style-type: none"> Main AI Engineer for critical infrastructure and core systems Owned document intelligence services and cloud APIs Built serverless workflows for high-volume data processing Stack: Python, AWS (Lambda, ECS, S3, Step Functions), DynamoDB, PyTorch, LangChain, LlamaIndex, RAG, Generative AI 	
Senior Data Scientist & Software Engineer in AI, R&D	Oct 2023 - Sept 2024
Publicis Sapient	
<ul style="list-style-type: none"> Led development from POC to fully production-grade systems Built enterprise RAG systems with retrieval optimization Delivered client-facing solutions and technical propositions Stack: Python, FastAPI, LangChain, Transformers, PyTorch, Docker, Azure, KubeFlow, Redis, Milvus, AI Agents, Azure OpenAI 	
Data Scientist & Developer -> Senior Specialist	May 2022 - Oct 2023
Valcon Netherlands	
<ul style="list-style-type: none"> Led and mentored a team of 6 engineers Owned design of document processing microservices Built data extraction and document classification services from scratch Stack: Python, Azure DevOps, Azure Data Factory, Synapse, Data Lake, Docker 	
Data Scientist	Oct 2021 - Apr 2022
Optimal Systems GmbH	
<ul style="list-style-type: none"> Systematic model evaluation and hyperparameter tuning for ML classification Data-driven insights and testing/validation of ML systems Stack: Python, Docker, Machine Learning, Azure 	
Researcher	Mar 2020 - Mar 2022
BioIRC - Bioengineering R&D Center	
<ul style="list-style-type: none"> Built components for EU Horizon 2020 computational platform (SILICOFCM) ECG, CPET, and biomedical data processing; peer-reviewed publications Stack: Python, Statistical Analysis, SPSS, ECG, CPET, Biomedicine 	
PhD Researcher	Oct 2018 - Mar 2022
University of Belgrade	
<ul style="list-style-type: none"> Developed research methodology and statistical frameworks Applied machine learning to biomedical datasets; published papers internationally Stack: Python, PyTorch, SPSS, Machine Learning, Biostatistics 	
Sports Scientist	Oct 2014 - July 2018
Sport and Recreation Center Obliquus	
<ul style="list-style-type: none"> Built algorithms for signal processing and data collection Functional testing and performance analysis for athletes Stack: Python, SPSS, LabVIEW, Data Analysis 	

KEY PROJECTS

Full list: manse404.github.io/webpage/projects.html

AI-Powered Document Summarizer

RAG-based summarization pipeline with LLMs for unstructured corpora
Python, AWS Bedrock, S3, Step Functions, LangChain, LlamaIndex, RAG

Document Data Extractor Service

Deep learning algorithms for extracting data from unstructured text
Python, Azure Data Factory, Synapse, PyTorch, Flask, Docker

Document Classification Service

ML-based document categorization with containerized microservices
Python, Docker, Azure, Flask, REST API, ML Classification

AI-Code Copilot

Enterprise AI copilot for internal infrastructure and knowledge bases
Python, Azure OpenAI, LangChain, Milvus, Redis, Fine-Tuning, KubeFlow

Large-Scale ETL Pipeline

Serverless data ingestion and transformation on AWS
Python, AWS Lambda, S3, Step Functions, DynamoDB, ECS

Document Chatbot

Enterprise chatbot with optimized ingestion pipelines and retrieval
Python, FastAPI, Azure Search, Azure OpenAI, RAG, Docker

SILICOFCM - EU Horizon 2020

Computational platform for in silico clinical trials of cardiomyopathies
silicofcm.eu
Python, PyTorch, Biostatistics, ECG, CPET

Voice-Enabled Support Chatbot

Conversational AI with speech-to-text and text-to-speech for telephony
Python, Azure LUIS, Azure Speech Services, Azure Bot Service, Docker

SELECTED PUBLICATIONS (TOTAL: 10+ PUBLICATIONS | 100+ CITATIONS)

A Machine Learning Approach to Gene Expression in Hypertrophic Cardiomyopathy

Pavic, J., Zivanovic, M.N., Seman, S., et al.
Pharmaceuticals (MDPI), 2024

Ventilatory Efficiency Parameters Outperform Peak VO₂ in Monitoring Therapy Effects in HCM

Seman, S., Tesic, M., Popovic, D., et al. (SILICOFCM Investigators)
European Heart Journal, Vol. 45, Supplement 1, 2024

Defining the Importance of Stress Reduction in Managing Cardiovascular Disease - The Role of Exercise

Popovic, D., Bjelobrak, M., Tesic, M., Seman, S., et al. (HL-PIVOT)
Progress in Cardiovascular Diseases, Vol. 70, pp. 84-93, 2022

Physical activity and exercise as an essential medical strategy for the COVID-19 pandemic and beyond

Seman, S., Srzentic Drazilov, S., et al. (HL-PIVOT Network)
Experimental Biology and Medicine, Vol. 246, Issue 21, 2021

EDUCATION

PHD CANDIDATE

Sport Science

University of Belgrade
2018 - Present

Focus: Machine learning applications in exercise physiology and biomedical signal processing

MASTER'S DEGREE

Sports Medicine

University of Novi Sad

BACHELOR'S DEGREE

Sport Science

University of Belgrade

CERTIFICATIONS

- ✓ Microsoft Certified: Azure AI Associate
- ✓ Databricks Academy: Lakehouse Fundamentals
- ✓ Johns Hopkins University: COVID-19 Contact Tracing (Coursera, 2021)

- ✓ Microsoft Certified: Azure Data Fundamentals
- ✓ Databricks Academy: Generative AI Fundamentals

MEMBERSHIPS

- ✓ ACSM - American College of Sports Medicine
 - ✓ SEBM - Society for Experimental Biology and Medicine
 - ✓ Serbian Society for Prevention of Chronic Noncommunicable Diseases
 - ✓ Serbian Mountain Rescue Service
 - ✓ Montenegrin Journal of Anthropology in Sports and Physical Education - Editorial Board Member
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Languages: Serbian (Native) English (Fluent)