

Vitalii Zhukov, Ph.D.

346 332 8210
ZHUKO.V.ITALY@GMAIL.COM
VVZHUKOV.GITHUB.IO

SUMMARY

Senior AI Engineer with 15+ years of experience building large-scale software systems, research-driven ML models, and production-grade AI infrastructure. Specialized in LLM systems, distributed inference, and scalable MLOps pipelines. Proven ability to translate research into secure, high-performance AI solutions improving accuracy, reliability, and operational efficiency.

EXPERIENCE

2024 – Present

Senior AI Engineer | LLM Systems & MLOps

BloomBoard, Inc.

- Stack: Python, Transformers (Hugging Face), vLLM, Prefect, MongoDB, AWS (S3), Kubernetes, Docker, Ansible.
- Architected and deployed parallel artifact assessment workflows (audio, video, and document analysis) with robust error handling, tag validation, and automated orchestration; improved assessment accuracy from 0.70 to 0.85 through agentic workflows and Prefect-based orchestration.
- Designed and implemented scalable MLOps pipelines for model deployment, load balancing, and secure data management, integrating GraphQL services and dynamic AWS S3 region detection to ensure regulatory compliance and successful Vanta security audits.
- Reduced workflow failure rates by 40% through custom exception handling frameworks and development of self-recovering autonomous agents.

2019 – 2024

AI/ML Researcher

CS Department, Computational Physiology Laboratory

- Stack: Python (PyTorch, Keras, TensorFlow), MySQL, PostgreSQL, GPT-3.5, LLaMA2, ALBERT, R (tidyverse, dplyr, car, lme4, caret, MASS, shiny, ggplot2, plotly), Open MPI, CUDA.
- Led 3 research projects, examining laws underlying human behavior and achievement in highly competitive environments resulting in two journal manuscripts and two conference presentations.
- Designed novel analytical method (data quality control for skewed distributions), improving signal extraction in high-variance behavioral datasets.. Collected and annotated data in different domains (inc. networks with 35m nodes, 120m+ edges). Applied inferential tools and fine-tuned large language models for hypothesis testing, classification, and forecasting.
- Developed a web-based system to collect, analyze, and visualize user surveys and performance data, optimizing course complexity and flow (4 semesters data, ~500 weekly surveys).
- Taught graduate-level classes: Statistical Methods in Research, Ubiquitous Computing, Data Structures and Algorithms to more than 2000 students in Computer Science department.

2017 – 2018

Project Manager (R&D)

Luxoft / Deutsche Bank

2010 – 2017

Head of Automation (R&D)

General Satellite

SKILLS

- Programming: Python, R, SQL, C++, Bash
- ML & LLM: PyTorch, TensorFlow, Transformers, vLLM, LangChain, RAG, Prompt Engineering
- MLOps & Orchestration: Prefect, Docker, Kubernetes, ELT pipelines
- Cloud & Data: AWS (S3), GCP (Vertex AI, BigQuery, DataFlow, DataFusion), MongoDB, PostgreSQL, MySQL
- DevOps & Collaboration: Git, GitLab, Jira, Confluence, Agile/Scrum

CERTIFICATIONS & DIPLOMAS

2014

Zabbix Certified Specialist

Zabbix, Credential ID CS-141077

2014 – 2015

Database Development and Administration

Peter the Great St. Petersburg Polytechnic University, GPA: 4.0

2015

Python Software Development

ITMO University, GPA 4.0

2016

ITIL Foundation v3

Eurika, Learning center

2016

Automating Administration with Windows PowerShell

Eurika, Learning center, 10961B

2018

Data Science Specialization

Johns Hopkins University, Coursera

2020

Information Privacy and Security (IPS)

CITI Program, Credential ID 39951557

2020

Responsible Conduct of Research for Engineers

CITI Program, Credential ID 39951088

2020

Conflict of Interest in Research

CITI Program, Credential ID 39951556

2024

Artificial Intelligence, Cybersecurity, Data Fundamentals

IBM SkillsBuild

2023 – 2024

GCP, VertexAI, Generative AI, Conversational AI, Looker, LookerML

Google CloudSkillBoost

EDUCATION

Doctor of Philosophy (Ph.D.)

Computer Science, University of Houston, GPA 3.9

Master of Science (M.S.)

Mechanical Engineering, Peter the Great St. Petersburg Polytechnic University

PUBLICATIONS

[SUBMITTED] **Zhukov**, Tsiamyrtzis, Pavlidis (2026) On the nature of human performance in competitive endeavors.

[PUBLISHED] **Zhukov**, Pavlidis, Dukes (2024) Science convergence in affective research is associated with impactful multidisciplinary appeal rather than multidisciplinary content.

[CONFERENCE PAPER] Hasan, Tsiamyrtzis, **Zhukov**, Manser, Wunderlich, Pavlidis (2023) ACM CHI 2024.

[PUBLISHED] Zhukova, Li, **Zhukov**, Grigorenko (2023) Children, 10(8), p.1367.

[CONFERENCE PAPER] **Zhukov** et al. (2022) Convergence in Affective Sciences, ISRE 2022, LA CA.

[BLOG] Personal technical blog, <https://vzhukov.github.io>