VITALII URBANEVYCH

Software Engineer, Ph.D. in Physics

vitaliyurbanevich@gmail.com | +48 503 902 656 | Kraków, Poland | vitaliiur.github.io
vitalii-urbanevych-470767184 | 0000-0002-1858-4708

EXPERIENCE

Software Engineer - Automation and Augmentation Technologies (from October 2024 - part time)

AON Poland

January 2024 – Ongoing | Kraków

- Main tools: Python, UiPath, Azure OpenAI, Azure DocumentUnderstanding, Streamlit, Docker, Azure DevOPS.
- Business process automation using machine learning techniques.
- Application of generative AI for the automation of business processes, including the processing of large documents and extraction of specific information.
- Development and deployment of user interfaces to the cloud.
- Data preprocessing, chunking, prompt engineering.
- Communication with clients to understand their requirements and provide tailored solutions.

Assistant (post-doc) (part time)

Jagiellonian University

October 2024 – Ongoing | Kraków

- Nuclear physics research in collaboration with the LHCb experiment at CERN.
- Simulation of sub-atomic physical processes.
- Teaching and mentoring of students.

Junior NLP Engineer

SAMSUNG POLAND R&D

July 2021 – December 2023 | Kraków

- Development and maintaining voice recognition models(training Neural Networks on cluster, data preparation, fine-tuning);
- Writing Python and BASH scripts, code reviewing;
- Fixing defects in voice recognition models (regex, data analysis, debugging);
- Working in Scrum framework with JIRA tasks;
- Researching NLP methods and patents, analysis of publications;
- Operating with large language models (LLM): inference, fine-tuning;
- International work environment.

Teaching Assistant

Jagiellonian University

2018–2023 | Kraków

- Practical classes of the course “Statistical Methods";
- Practical classes of the course “Medical Statistics";
- Laboratory classes in physics.

Software Engineer (part time)

Instytut Fotonowy

2019–2021 | Kraków

- Writing software for automatic calibration of the device using machine learning(GNU Octave, Matlab);
- GUI for operation with the device;
- Natural Language Processing:
  - Text database processing;
  - Word-to-vector;
  - Text classification.

Scientific researcher at SiFi-CC group (part time)

Jagiellonian University - international cooperation

2019–2023

- Investigation and optimisation of the geometry parameters;
- Simulations with Geant4 (development, optimisation and processing);
- Development of image reconstruction tools using MLEM algorithm(C++, Python, ROOT CERN);
- Experimental data analysis;
- International internship (Lübeck , Germany, 2021);
- Presenting results on scientific conference (iWoRiD2023, Oslo, Norway, 2023).

STACK

Machine learning | Data analysis | NLP | Neural networks | LLM | HuggingFace | Researching | Problem solving | Simulations | Mathematical and statistical analysis

Python | Machine learning | Geant4 | TensorFlow | PyTorch | Git | REGEX | Bash | C++ | Unix systems

EDUCATION

Philosophy Doctor in Nuclear Physics

2018 – 2024 | Jagiellonian University, Kraków, Poland

Master of Science in Physics of nucleus and high energies (with honours)

2015 – 2017 | ONPU, Odesa, Ukraine

Bachelor of Science in Physics (with honours)

2011 – 2015 | ONPU, Odesa, Ukraine

Selected courses and certificates

- Introduction to Data Science on coursera;
- TensorFlow specialisation on coursera;
- Advanced Statistics: Bayesian analysis and other selected topics
- Python programming in physics and biophysics

LANGUAGES

Ukrainian
English
Polish

INTERESTS

Volleyball | Football | Chess | Climbing, mountaineering | Guitar | Board games

SELECTED PUBLICATIONS

Journal Articles

- J. Hoscilowicz, A. Wiacek, J. Chojnacki, *et al.*, "Non-Linear Inference Time Intervention: Improving LLM Truthfulness," 2024. DOI: 10.48550/ARXIV.2403.18680.
- M. Wong, M. Kołodziej, K. Briggl, *et al.*, "Comparison of readout systems for high-rate silicon photomultiplier applications," *Journal of Instrumentation*, vol. 19, no. 01, P01019, Jan. 2024. DOI: 10.1088/1748-0221/19/01/P01019.
- R. Hetzel, V. Urbanevych, A. Bolke, *et al.*, "Near-field coded-mask technique and its potential for proton therapy monitoring," *Physics in Medicine & Biology*, vol. 68, no. 24, p. 245 028, Dec. 2023. DOI: 10.1088/1361-6560/ad05b2.
- J. Golak, V. Urbanevych, R. Skibiński, *et al.*, "Pion absorption from the lowest atomic orbital in $^{2}\mathrm{H}$,$^{3}\mathrm{H}$, and $^{3}\mathrm{He}$," *Phys. Rev. C*, vol. 106, p. 064 003, 6 Dec. 2022. DOI: 10.1103/PhysRevC.106.064003.
- V. Urbanevych, R. Skibiński, H. Witała, *et al.*, "Application of a momentum-space semi-locally regularized chiral potential to selected disintegration processes," *Phys. Rev. C*, vol. 103, p. 024 003, 2 Feb. 2021. DOI: 10.1103/PhysRevC.103.024003.
- V. Urbanevych, I. Sharph, V. Tarasov, and V. Rusov, "Newton's second law analogy for the traveling wave of nuclear burning," *EPJ Nuclear Sciences & Technologies*, vol. 6, p. 50, 2020. DOI: 10.1051/epjn/2020012.
- H. Witała, J. Golak, R. Skibi ński, K. Topolnicki, and V. Urbanevych, "Investigation of the interaction of circularly and linearly polarized photon beams with a polarized $^{3}\mathrm{He}$ target," *Phys. Rev. C*, vol. 101, p. 024 003, 2 Feb. 2020. DOI: 10.1103/PhysRevC.101.024003.

Conference Proceedings

- J. Golak *et al.*, "Investigations of the few-nucleon systems within the LENPIC project," vol. 3, 2020, p. 002. DOI: 10.21468/SciPostPhysProc.3.002.
- V. Urbanevych, J. Golak, R. Skibiński, and H. Witała, "An application of chiral forces with the semi-local regularization in momentum space to the deuteron photodisintegration process," vol. 1643, IOP Publishing, Dec. 2020, p. 012 111. DOI: 10.1088/1742-6596/1643/1/012111.
- V. Urbanevych, J. Golak, R. Skibiński, and H. Witała, "The application of chiral forces to the deuteron photodisintegration process at $E\gamma = 140$ mev," eng, 4, vol. 13, 2020, ch. 45th Congress of Polish Physicists, pp. 949–953.