Vadym Ivanchuk

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Munich, Germany

Education

Master of Science in Biomedical Engineering 2020
Technical University of Madrid Final Grade: 9.15/10

Bachelor of Science in Telecommunications Engineering 2018
Technical University of Madrid

Experience

Bioinformatician at the Clinical Genomics Core Facility Jul 2021 – Oct 2024
Karolinska Institutet & SciLifeLab Stockholm, Sweden

- Developed and maintained bioinformatics pipelines for the analysis of clinical genomics data (WGS, WES, RNA-seq).
- Collaborated with clinicians to design customized genomic reports that translated sequencing data into actionable insights.

Research Assistant at the Bioinformatics Group Feb 2021 – Jun 2021
Spanish National Cancer Research Center Madrid, Spain

- Optimized and validated a single-cell RNA-seq pipeline to identify tumor subpopulations and therapeutic targets.

Research Intern at the Liquid Biopsy Laboratory Feb 2020 – Jul 2020
Puerta de Hierro Majadahonda University Hospital Madrid, Spain

- Developed a bioinformatics pipeline to detect actionable mutations in NSCLC liquid biopsies for routine clinical care.

Research Assistant at the Computational Biology Group Dec 2018 – Oct 2019
Biogipuzkoa Health Research Institute & San Sebastián Oncology Hospital San Sebastián, Spain

- Designed and developed a full-stack web and mobile platform to collect and analyze patient-reported outcomes (PROs) for remote monitoring of oncology patients.

Research Intern at the Life Supporting Technologies Group Feb 2018 – Sep 2018
Technical University of Madrid Madrid, Spain

- Worked on the university's Smart House Living Lab projects integrating domotics, telemedicine, and AI to support independent elderly living.

Projects

BALSAMIC

Contributed to the design, development, and optimization of a Snakemake-based, Docker-containerized pipeline integrating multiple variant callers to detect SNVs, InDels, CNVs, and SVs from WGS, WES, and targeted sequencing data. Automated end-to-end data processing and delivery workflows, significantly reducing turnaround times and improving analysis efficiency.

OnkoPROs

Led the design and implementation of a web and mobile platform using an Angular/NativeScript frontend and an Nginx/JavaScript backend. Enabled clinicians to create customizable questionnaires for cancer treatment monitoring, while allowing patients to remotely submit health data and receive real-time clinical feedback.

vALK *Master's Thesis*

Developed a somatic variant filtering pipeline and user-friendly R interface to automate and standardize NGS liquid biopsy data curation for researchers and oncologists. Integrated computational and experimental methods to identify clinically actionable mutations and inform treatment strategies for NSCLC patients.

FERehab *Bachelor's Thesis*

Developed an AI-driven rehabilitation tool for Parkinson's Disease featuring a CNN-based facial expression recognition model. Implemented using Keras, TensorFlow, and OpenCV, and trained on Google Cloud Platform (GCP). Applied GAN-based data augmentation and transfer learning to overcome data limitations and improve model accuracy.

Skills

Programming Languages
Python, R, SQL, Bash, Java, JavaScript, C

Machine Learning & Computer Vision
TensorFlow, Keras, OpenCV, CNNs, GANs, GCP

Scientific Computing & DevOps
Snakemake, Docker, Singularity, HPC, GitHub, CI/CD

Web & Mobile Development
Angular, NativeScript, Android Studio, HTML/CSS

Languages
English (Fluent), Spanish/Ukrainian/Russian (Native), German (Intermediate – B1)

Research

Publications

NGS-based liquid biopsy profiling identifies mechanisms of resistance to ALK inhibitors: A step toward personalized NSCLC treatment. *Molecular Oncology* (2021).
Sánchez-Herrero, E., Serna-Blasco, R., **Ivanchuk, V.**, et al.
DOI: *10.1002/1878-0261.13033*

Beyondcell: Targeting cancer therapeutic heterogeneity in single-cell RNA-seq data. *Genome Medicine* (2021).
Fustero-Torre, C., Jiménez-Santos, M. J., García-Martín, S., Carretero-Puche, C., García-Jimeno, L., **Ivanchuk, V.**, et al.
DOI: *10.1186/s13073-021-01001-x*

Conferences & Presentations

BALSAMIC: Bioinformatic analysis pipeline for somatic mutations in cancer. **Poster presentation** at the *Cutting Edge Implementation of Precision Medicine in Europe Symposium* (Stockholm, 2022).
Foroughi-Asl, H., Jeggari, A., **Ivanchuk, V.**, et al.

Implementation and validation of RNA-fusion detection in routine cancer diagnostics. **Poster presentation** at the *20th Cancer Research Karolinska Institutet Retreat* (Stockholm, 2023).
Renevey, A., Caceres E., Jemt A., **Ivanchuk, V.**, et al.

European Human Genetics Conference. **Poster presentation** at the *Enabling large-scale clinical sequencing through the automation of bioinformatic workflows and data management* (Glasgow, 2023).
Janvid, V., Nyrén K., **Ivanchuk, V.**, et al.

Identification and interpretation of clinically relevant somatic variants from whole-genome sequencing data. **Abstract presentation** at the *64th Annual Meeting of American Society of Hematology* (New Orleans, 2022).
Maqbool, K., Foroughi-Asl, H., Jeggari, A., **Ivanchuk, V.**, et al.
DOI: *10.1182/blood-2022-163295*