Ilia Zenkov

📱 **647-568-4727** | ✉ **ilzenkov@gmail.com** | in **ilia-zenkov** | ⓞ **github** | 🎓 **Research**

Research Scientist with 2 years experience using Python to generate data pipelines with published results

Skills

Languages	Python, SQL, Java, LaTeX
Technologies	Django, Postgres, Travis CI/CD, tox, Docker, Spark, Jupyter, Git
Tools	PyTorch, sklearn, NumPy, PANDAS, Matplotlib, pytest, Psycopg2, Scrapy, spaCy, Seaborn, SciPy, statsmodels

Experience

⤤ McGill University; Lady Davis Institute
Montreal, QC

RESEARCH ASSISTANT
Sept 2017 - May 2018

- Wrote a custom **Python** script to automate parsing and conversion of binary format experiment data files into **PANDAS DataFrames** and **JSON** for storage using **PostgreSQL**, enabling automated statistical analysis with **NumPy** and **SciPy**
- Designed a semi-automated **data pipeline** for a high throughput drug screening using **PostgreSQL** and **Python** with **PANDAS, NumPy,** and **Matplotlib,** producing findings constituting a primary objective in a **$1M federal grant** (CIHR)
- Accepted presenter at the Lady Davis Institute Cancer Research Axis Seminar 2018
- Developed from scratch and optimized experiments and **statistical analysis** using **Python** on an independent research project from proof-of-concept through to live-animal experiment stage, culminating in a $20 000 project **grant proposal**
- Awarded research grant of $5 000 which covered cost of reagents needed for an independent research project

⤤ Harvard Medical School
Boston, MA

VISITING UNDERGRADUATE RESEARCHER
Sept 2016- May 2017

- **Automated statistical analysis** of numerical experiment data with **Python** using **NumPy, PANDAS, and SciPy**, automated visualization using **Matplotlib** and **Seaborn**, and enabled access on a local lab server using **Django** and **Gunicorn**
- Built a **Python** tool to track status and inventory of biological samples using **PostgreSQL** for data storage and **PANDAS** to display information in **DataFrames**; deployed as a **RESTful API** using **Django REST framework** and **Gunicorn**
- Designed from scratch, conducted, and optimized experiments and **statistical analysis with Python**, validating a collaborative nanoparticle research proposal; research accepted and published in a high-impact peer reviewed journal

⤤ University of Waterloo Centre for Teaching Excellence
Waterloo, ON

SPECIAL PROJECTS COORDINATOR
Jan 2016 - May 2016

- Identified and statistically analyzed shortcomings in workshop attendance with respect to academic term and attendee faculty membership using **Python** data science and plotting libraries **NumPy, SciPy,** and **Matplotlib.**

Projects

🎓 **Speech Emotion Recognition by Parallelizing CNNs and Transformer-Encoders • PyTorch • NumPy • sklearn**

ACHIEVED 97.11% ACCURACY ON HOLD-OUT SET FROM RAVDESS SPEECH AUDIO DATASET BY COMBINING SPATIAL AND TEMPORAL FEATURE REPRESENTATIONS USING PARALLEL NETWORK ARCHITECTURE WITH STACKED CONVOLUTIONAL AND TRANSFORMER-ENCODER LAYERS, DATA AUGMENTATION, DROPOUT, AND BATCHNORM.

Peer-Reviewed Publications

🎓 **Co-Author: Sugar-Nanocapsules Imprinted with Microbial Molecular Patterns for mRNA Vaccination**

NANO LETTERS 2020 20 (3), 1499-1509 • IMPACT FACTOR 12.4

🎓 **Co-Author: Flat Cell Culturing Surface May Cause Misinterpretation of Cellular Uptake of Nanoparticles**

ADVANCED BIOSYSTEMS 2018 2 (6), 1800046 • 2020 EXPECTED IMPACT FACTOR 7.5-10

Education

University of Waterloo
Waterloo, Ontario

B.SC. HONOURS BIOPHYSICS
2014 - 2019

Awarded University of Waterloo President's Scholarship of Distinction
Courses: Differential Equations, Linear Algebra, Statistical Mechanics, Computational Physics, Quantum Info Processing

Personal Interests

🎵 **Pianist:** Classically trained - Rachmaninoff preludes are a favourite

⬆ **Powerlifter:** Standing Canadian junior national bench press record holder since 2017