Erwin **Erdem**

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Programming Skills

Languages Python (`pandas`, `scipy`, `numpy`, `scikit-learn`, `scanpy`, `tensorflow`, `pytorch`, `plotly`, `matplotlib`, `seaborn`, `dash`, `pytest`, `unittest`) • R (`tidyverse`, `ggplot2`, `DESeq2`) • JavaScript (`D3`, `plotly`) • Bash • MATLAB • Julia • Java • Perl

Technologies Visual Studio Code • Jupyter Notebook • Git • Conda • Snakemake • Docker • HTML/CSS (Bootstrap)

Work Experiences

Current – Feb 2020 | **Bioinformatics Consultant, ProQR Therapeutics, Leiden, The Netherlands**
Consultancy in bioinformatics for the development of new RNA editing technologies at the Innovation Unit.
- QC, map and analyze (single cell) RNA-seq data on a server using `MultiQC`, `STAR(solo)`, `samtools`, `snakemake`, `scanpy`, `DESeq2` and `plotly` among others
- Employing and training deep learning models with `keras` and `tensorflow`
- RNA folding and protein interaction prediction (`ViennaRNA`, `UFold`, `AlphaFold` etc.)

Apr 2020 – Mar 2017 | **Student Assistant, Delft University of Technology, Delft, The Netherlands**
Assisted students in MATLAB exercises and homework assignments for the Biophysics course (NB1132) given by prof.dr. Chirlmin Joo of the Bionanoscience department at TU Delft for five weeks every year.
- Modeling various biophysical processes
- Communicating complex biophysics topics and teaching basic programming to students

Jan 2019 – May 2018 | **Tutor, Studentsplus, The Netherlands**
Aided high school students with chemistry, physics, mathematics and biology

Sep 2018 – Jul 2018 | **API Tester, Data Archiving and Networked Services, DANS, Den Hague, The Netherlands**
Created test cases for archiving research data onto a server using `curl` and Git for version control.
- API improvement through regular communication with the developers using GitHub

Internships & Theses

Jun 2021 – May 2020 | **Master Thesis, Erasmus MC, Computational Population Biology group, Rotterdam, The Netherlands**
Developed a computational framework which elucidates more on the complex genomics of brain (imaging) phenotypes by combining GWAS with scRNA-seq data. Supervised by dr. Gennady Roshchupkin and prof.dr. Steven Kushner.
- Incorporate data from various (public) resources (NHGRI-EBI GWAS Catalog, GWAS atlas, descartes) to assess the framework

Jan 2020 – Sep 2019 | **Intern, ProQR Therapeutics, Leiden, The Netherlands**
Established a computational platform in Python to accelerate the development of Trident™, an RNA pseudouridylation editing technology. Supervised by dr. Pedro Morais.
- Development of novel analysis tool specific for the Trident™ technology

Jul 2017 – Feb 2017 | **Bachelor Thesis, TU Delft Bionanoscience Department, Chirlmin Joo Lab, Delft, The Netherlands**
Observed the dynamics of FnCas9 from the CRISPR-Cas9 system with a custom guide RNA and DNA complex using single molecule fluorescence resonance energy transfer with a total internal reflection fluorescence (TIRF) microscopy. Supervised by dr. Viktorija Globytė and prof.dr. Chirlmin Joo.
- Expression, isolation and purification of the FnCas9 DNA endonuclease protein and gRNA

Education

2018-2021 **MSc** Nanobiology (Joint Degree TU Delft and Erasmus MC)
2014-2018 **BSc** Nanobiology (Joint Degree TU Delft and Erasmus MC)
Minor Computational Approaches to Disease, Signaling and Drug Targets (Leiden University)