Kornel Labun

Phone: +47 40574163
E-mail: kornel.labun@gmail.com
Website: kornellabun.com
Github: https://github.com/JokingHero
Judge my R: https://github.com/valenlab/amplican

EDUCATION

2015 - 2019 **PhD:** University of Bergen, Department of Informatics, Computational Biology Unit

2009 - 2014 **MSc. Eng.**: Silesian University of Technology, Faculty of Automatic Control, Electronics and Computer Science; **Biotechnology**, spec. **Bioinformatics**

- Awarded (2nd place) in Best Students' Scientific Circle of Bioinformatics Projects in 2011/2012 Competition.

RESEARCH EXPERIENCE

2015 - 2019 PhD: "In silico design and analysis of gene editing experiments." (supervisor: Eivind Valen)

- Analysis of RNA-Seq, Ribo-Seq, Cage-Seq, ATACK-Seq, SMS-seq and other ***-Seq** kind of datasets, as well as Oxford **Nanopore** sequencing data (noisy signal over time)
- Development of pipelines and **tools** (ORFik, ampliCan, RareVariantVis, CHOPCHOP, tailfindR)
- **Machine learning** related projects: prediction of polyA tail from nanopore data, prediction of repair profile after CRISPR edits
- Teaching for courses: INF207 (**Social Network Theory**), INF109 (**Computer Programming for Science**), and **R Crash Course** for Molecular and Computational Biology Research School

2013 - 2014 "Spatial evolutionary games as a tool for modeling inter-population interactions". MSc dissertation (supervisor: Prof. Andrzej Świerniak)

- **Evolutionary game theory** in the cellular automaton to solve differential equations

2012 - 2013 "Seeking for the signature of radiosensitivity with the use of data on single nucleotide polymorphisms and the results of γ-H2AX test with the expressions of the chosen DNA repair genes." Eng project (supervisor: Prof.

Joanna Polańska)

- Modeling gene expression changes using **statistics**

PUBLICATIONS

tailfindr: Alignment-free poly(A) length measurement for Oxford Nanopore RNA and DNA sequencing
M Krause, AM Niazi, **K Labun**, YN Torres Cleuren, FS Müller, E Valen
2019, accepted manuscript

CHOPCHOP v3: expanding the CRISPR web toolbox beyond genome editing
K Labun, TG Montague, M Krause, Y Torres Cleuren, H Tjeldnes, E Valen
2019, Nucleic acids research, TBD

Accurate analysis of genuine CRISPR editing events with ampliCan
K Labun, X Guo, A Chavez, G Church, JA Gagnon, E Valen
2019, Genome Res. 29: 843-847

CHOPCHOP v2: a web tool for the next generation of CRISPR genome engineering
K Labun, TG Montague, JA Gagnon, SB Thyme, E Valen
2016, Nucleic acids research 44 (W1), W272-W276

RareVariantVis: new tool for visualization of causative variants in rare monogenic disorders using whole genome sequencing data
T Stokowy, M Garbulowski, T Fiskerstrand, R Holdhus, **K Labun**, ...
2016, Bioinformatics 32 (19), 3018-3020

WORK EXPERIENCE

2019 - 2020 **Senior Consultant** at Sonat Consulting AS - Machine learning/AI, data analysis, ETL/ELT and databases, DevOps, Agile/Lean, Google Cloud Platform/Microsoft Azure

2015 - 2019 **PhD candidate** at the University of Bergen in the ValenLab.

2014 - 2015 **Software engineer/data analyst** at “rspective” - front-end and back-end website development, machine learning solutions and data analysis, quality assessment, architectural design and deployment.

Projects:

- Data analysis and preparing machine learning solutions to optimize logic behind german startups.
- Developing and maintaining web applications about passenger relationship management systems for public transport - responsible for frontend and backend. Application created with a range of javascript oriented technologies: MongoDB, Heroku, Node.js, AngularJS, jQuery, Twilio, Nexmo, MailChimp, Mandrill, Dropbox, Express, Grunt, Bower.
- Developing Android Application concerning gambling with push

messaging and also SOAP services. Additionally created widget for fast checking of the results and quick access to the application. Technologies used: Android SDK, Java, Android Studio.
- Developing and maintaining web applications for football scouts - incorporating multi-tenant architecture, with flexibility for specific tenant needs. Used technologies: Java, Spring, Hibernate, AngularJS.
- Creating a more extended version of microblog with technologies: Node.js, AngularJS, MongoDB, Bootstrap.

August 2011 — **Internship** at Maria Sklodowska-Curie Memorial Cancer Center and Institute of Oncology Gliwice Branch, Department of Nuclear Medicine and Endocrine Oncology

ADDITIONAL INFORMATION

Programming languages	**R, python**, JavaScript, **Julia**, Java (Android), Matlab + Simulink, LabView
Frameworks	**Keras, TensorFlow (& Lite), tidyverse, scikit-learn,** Node.js, AngularJS, Express, D3.js
PaaS & SaaS integrations	Heroku, Openshift, Twilio, Nexmo, MailChimp Dropbox etc.
Databases	MongoDB, Redis, MySQL
Version control systems	Git
Other	Statistics, parallel computing with computational clusters, linux
Languages	Polish (native), English (fluent), Russian (basic)
Memberships	World Chess Federation, Bergen Judo Club

INTEREST AND ACTIVITIES

chess

books

judo

watercolor

manga

SCIENTIFIC INTERESTS

biostatistics

bioinformatics

design patterns

blockchain

machine learning

Please contact me for my references.