Enes Kemal Ergin

CONTACT INFORMATION

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RESEARCH INTERESTS

Computational analysis of proteomic datasets, cancer proteomics, machine learning applications (deep learning in particular) for mass spectrometry data.

EDUCATION

University of British Columbia (UBC), Vancouver, BC Canada
Bioinformatics
PhD, Bioinformatics, 2019 - 2023

- **Advisor:** Philipp Lange
- **Thesis Title:** "Statistical approaches for identifying proteome features in pediatric cancers."

University of British Columbia (UBC), Vancouver, BC Canada
Bioinformatics
MSc, Bioinformatics, 2017 - 2019(Transfered)

North American University (NAU), Houston, Texas USA
Software Engineering
BSc, Computer Science, 2013 - 2017

RESEARCH EXPERIENCE

Graduate Research Assistant

BC Children's Hospital Research Institute **September, 2017 - present**

- **Research:** Implementing set of statistical and computational methods for exploring proteomic features in childhood cancers based on bottom-up proteomics approaches, with a focus on proteoforms.

Visiting Researcher

Harvard Medical School **November, 2015 - September, 2016**

- Research: Predicting the determinants of alternative mRNA splicing
  - **Aim:** To determine how histone modifications influence the alternative splicing.
  - Developed a **deep convolutional neural network** to predict mRNA expression patterns from 11 different histone modification datasets (pilot in HeLa cells).
- Research: Predicting transcription factor binding sites across cell types
  - **Aim:** To develop a general framework to predict transcription factor (TF) binding sites accross various cell types.
  - Developed a machine learning-based algorithm can utilize large datasets (approximately 900GB) for estimating TF binding sites.

Undergraduate Research Assistant

North American University **September, 2015 - May, 2017**
Leading student in Bioinformatics Lab at NAU. Mentored 4 junior and sophomore students.
Designed an open source bioinformatics curriculum with Open Source Society in GitHub.

Yeditepe University **August, 2014 - May, 2015**
Worked as a genomic data scientist to utilized virtual docking software to determine the best possible inhibitor for specific molecule by mainly using NCBI PubMed database.

Texas Institute of Education and Research (TIBER) **September, 2014 - April, 2015**
Wet-lab experience: Worked on drug development and testing process. Was responsible for preparing agar solutions, bacteria cultures, and liquid/solid drug tests on those bacteria cultures.

Teaching Experience

Teaching Assistant

North American University **September 2015 - May 2017**
Co-taught 4 undergraduate level courses for computer science department to over 60 students each semester. Prepared the lab and extra sessions on Git/GitHub, Rapid Python Programming, and Ipython/Jupyter. Shared responsibilities for preparing lectures, exams, homework assignments, and grading.

- COMP 3317 Algorithms, Fall 2015, 2016.
- COMP 3320 Programming Languates, Fall 2016, Spring 2017.
- COMP 3322 Software Engineering, Fall 2016.
- COMP 2415 Systems Programming, Spring 2017

Mathematics and Computer Science Tutor

North American University **January - May 2017**
Helped and advised students about their school classes. Tutored in various subjects from college algebra to differential equations in Mathematics domain and from CS1 to Data Mining in Computer Science domain.

Instructor

North American University **February - April 2015**
Taught Basic Python programming course to 35 people including students, faculty, and staff of NAU, which was a first ever course taught solely by a student in NAU. (Link)

Publications

Weng S.H, Demir F., **Ergin E.K**, Dirnberger S., Uzozie A., Tuscher D., Nierves L., Tsui J., Huesgen P.F, Lange P.F. (2019) Sensitive determination of proteolytic proteoforms in limited microscale proteome samples *BioRxiv*

Kocabas F., **Ergin E.K**. (2016). Identification of small molecule binding pocket for inhibition of Crimean-Congo hemorrhagic fever virus OTU protease. *Turkish Journal of Biology*, 40:239-249.

Posters

Ji J., Thibodeau M., **Ergin E.K.**, Culibrk L., Smith T.. (2018). SWI/SNF Chromatin Remodeling Complex in Clear Cell Ovarian Cancer. Stat540 Group Project Poster Session.

Projects

Open Source Bioinformatics Curriculum **June 2016**
Developed a open source bioinformatics curriculum with contributions of open source society, which gives aspiring bioinformatics scientists chance to start building their foundational knowledge. (Link)

Scholar Development Center **February 2016**
Created a non-profit community based organization under the Raindrop Foundation to help Turkish undergraduate students around Texas to achieve their dreams in academia or industry.

Honors and Awards

Michael Cuccione Childhood Cancer Foundation Graduate Studentship, 2018-2019

North American University: Exceptional Merit Scholarship, 2012-2017

North American University: President's Honor Roll , 2015-2017

North American University: Outstanding Student of the Year, 2015

Extracurricular Activities

- ISCB (International society of computational biology), *Member* — **August, 2016 - present**
- ACM (Association for Computing Machinery), *Member* — **February 2013 - present**
- NAU Kazakh Student Association, *Club Advisor* — **September 2016 - May 2017**
- NAU Future Leaders Club, *Founder and Director* — **April, 2015 - May 2017**
- Student Government, *VP of Unity and Social Justice* — **September 2014 - May 2017**
- NAU ACM, *Member* — **September 2013 - May 2017**
- NAU ACM, *Vice President* — **September 2015 - May 2016**
- NAU ACM, *Secretary* — **February 2013 - September 2014**

Technical Skills

- **Languages:** Python(Pandas, Numpy, H5py, Tensorflow, Biopython, Scikit-learn), R(tidyverse, limma, deseq2, msstats), Java, LaTeX, C/C++, Shell/Bash Scripting, Javascript, HTML, CSS
- **Database Systems:** SQL, MySQL, MongoDB
- **Operating Systems:** Unix/Linux, MacOS, Windows.

References

- Assistant Prof. Dr.Philipp Lange, Pathology Department, University of British Columbia, Vancouver, BC, Canada, philipp.lange@ubc.ca
- Assistant Prof. Dr. Stirling L. Churchman, Genetics Department, Harvard Medical School, Boston, MA, USA, churchman@genetics.med.harvard.edu
- Associate Prof. Dr. Kemal Aydin, Computer Science Department, North American University, Houston, TX, USA, kemal@na.edu
- Prof. Dr. Cengiz Zubeyir Altuntas, Director of Texas Institute of Biotechnology Education and Research, North American University, Houston, TX, USA cza@na.edu