

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:** “Developing computational resources to capture and study the proteome in child development and cancer”

University of British Columbia (UBC), Vancouver, BC Canada

Bioinformatics

MSc, Bioinformatics, 2017 - 2019(Transferred)

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 statistical and computational methods for exploring proteomic features in childhood cancers based on bottom-up proteomics approaches focused 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 across 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 Languages, 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

Under Review

Lorentzian, A. C., Rever, J., **Ergin, E. K.**, Guo, M., Akella, N. M., Rolf, N., Lim, C. J., Reid, G. S. D., Maxwell, C. A., Lange, P. F. (2022). Persistence of targetable lesions predicted therapy sensitivity and proteomes through disease evolution in pediatric acute lymphoblastic leukemia, [doi: 10.1101/2022.03.04.22271927](https://doi.org/10.1101/2022.03.04.22271927), *medRxiv*

Published

Ergin, E.K., Uozie, A.C., Chen, S., Su, Y., Lange, P.F. (2022). SQuAPP - Simple Quantitative Analysis of Proteins and PTMs, [doi: 10.1093/bioinformatics/btac628](https://doi.org/10.1093/bioinformatics/btac628), *Bioinformatics*

Uozie A., **Ergin E.K.**, Rolf N., Tsui J., Lorentzian A., Weng S.H, Nierves L., Smith T., Lim C.J, Maxwell C., Reid S.G, Lange P.F. (2022). PDX models reflect the proteome landscape of pediatric acute lymphoblastic leukemia but divert in select pathways, [doi: 10.1186/s13046-021-01835-8](https://doi.org/10.1186/s13046-021-01835-8), *Journal of Experimental and Clinical Cancer Research*

Weng S.H*, Demir F.*, **Ergin E.K.**, Dirnberger S., Uozie A., Tuscher D., Nierves L., Tsui J., Huesgen P.F, Lange P.F. (2019). Sensitive determination of proteolytic proteoforms in limited microscale proteome samples, [doi: 10.1074/mcp.TIR119.001560](https://doi.org/10.1074/mcp.TIR119.001560), *Molecular and Cellular Proteomics*

Kocabas F., **Ergin E.K.** (2016). Identification of small molecule binding pocket for inhibition of Crimean-Congo hemorrhagic fever virus OTU proteasem [doi: 10.3906/biy-1501-56](https://doi.org/10.3906/biy-1501-56) *Turkish Journal of Biology*, .

PRESENTATIONS

Oral Presentations

	<p><i>Trainee Omics Group (TOG)</i> May 2020</p> <p>Title: Normalization in Proteomics: Past, Present, and Future</p>																
	<p><i>2023 Canadian National Proteomics Network</i> May 2023</p> <p>Title: InPACCT: Integrated Proteomics Analysis of Curated Childhood Tumours</p>																
	<p>Poster Presentations</p> <p>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.</p> <p>Rostin K., Ergin E.K., Lange P.F. (2023). Insightful, Integrated Analyses of Public Pediatric Cancer Proteomics with InPACCT, BIG 23 Research Day, Vancouver, BC, Canada.</p> <p>Ergin E.K., Lange P.F. (2023). Stable Proteome in Cancer Cell Lines with Combined Testing, BIG 23 Research Day, Vancouver, BC, Canada.</p> <p>Ergin E.K., Lange P.F. (2023). Stable Proteome in Cancer Cell Lines with Combined Testing, 2023 Canadian National Proteomics Network, Regina, SK, Canada.</p> <p>Ergin E.K., Rostin K., Lange P.F. (2023). InPACCT: Integrated proteomics analyses of curated childhood tumours, 2023 Canadian National Proteomics Network, Regina, SK, Canada.</p>																
PROJECTS	<p>Open Source Bioinformatics Curriculum June 2016</p> <p>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)</p> <p>Scholar Development Center February 2016</p> <p>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.</p>																
HONORS AND AWARDS	<p>Four Year Doctoral Fellowship Award, 2019-2023</p> <p>Michael Cuccione Childhood Cancer Foundation Graduate Studentship, 2018-2019</p> <p>North American University: Exceptional Merit Scholarship, 2012-2017</p> <p>North American University: President's Honor Roll , 2015-2017</p> <p>North American University: Outstanding Student of the Year, 2015</p>																
EXTRACURRICULAR ACTIVITIES	<table border="0"> <tr> <td>• ISCB (International society of computational biology), <i>Member</i></td> <td>August, 2016 - present</td> </tr> <tr> <td>• ACM (Association for Computing Machinery), <i>Member</i></td> <td>February 2013 - present</td> </tr> <tr> <td>• NAU Kazakh Student Association, <i>Club Advisor</i></td> <td>September 2016 - May 2017</td> </tr> <tr> <td>• NAU Future Leaders Club, <i>Founder and Director</i></td> <td>April, 2015 - May 2017</td> </tr> <tr> <td>• Student Government, <i>VP of Unity and Social Justice</i></td> <td>September 2014 - May 2017</td> </tr> <tr> <td>• NAU ACM, <i>Member</i></td> <td>September 2013 - May 2017</td> </tr> <tr> <td>• NAU ACM, <i>Vice President</i></td> <td>September 2015 - May 2016</td> </tr> <tr> <td>• NAU ACM, <i>Secretary</i></td> <td>February 2013 - September 2014</td> </tr> </table>	• ISCB (International society of computational biology), <i>Member</i>	August, 2016 - present	• ACM (Association for Computing Machinery), <i>Member</i>	February 2013 - present	• NAU Kazakh Student Association, <i>Club Advisor</i>	September 2016 - May 2017	• NAU Future Leaders Club, <i>Founder and Director</i>	April, 2015 - May 2017	• Student Government, <i>VP of Unity and Social Justice</i>	September 2014 - May 2017	• NAU ACM, <i>Member</i>	September 2013 - May 2017	• NAU ACM, <i>Vice President</i>	September 2015 - May 2016	• NAU ACM, <i>Secretary</i>	February 2013 - September 2014
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TECHNICAL SKILLS	<ul style="list-style-type: none"> • Languages: Python(Pandas, Numpy, H5py, Tensorflow, Biopython, Scikit-learn), R(tidyverse, limma, dseq2, msstats), Java, L^AT_EX, C/C++, Shell/Bash Scripting, Javascript, HTML, CSS • Database Systems: SQL, MySQL, MongoDB • Operating Systems: Unix/Linux, MacOS, Windows. 																