Nicholas Attila Kovacs

Structural Bioinformaticist & Data Scientist

(248)-895-274 | NicholasAttilaKovacs@gmail.com | www.NicholasAKovacs.com | NicholasAKovacs | NicholasAKovacs

Summary

- Adaptive computational scientist that enjoys learning and mastering new skills and technologies.
- Excellent team player and collaborater in computational and experimental research which have resulted in 9 peer-reviewed publications.
- Effective and confident science communicator, both oral and written, making scientific concepts accessible to audiences of diverse backgrounds.

Education

Ph.D. Bioinformatics — *Atlanta, GA*
Georgia Institute of Technology — *Aug 2013 - Dec 2018 (expected)*

B.S. Biochemistry and Molecular Biology/Biotechnology — *East Lansing, MI*
Michigan State University — *Aug 2008 - May 2012*

Experience

Graduate Research Assistant — *Atlanta, GA*
Georgia Institute of Technology — *Aug 2013 - Current*

Dissertation: *The Evolution of Proteins Revealed by Data Mining the Ribosome*
- **Results**: Published 2 first-author papers and 5 coauthored papers. 3rd first-authored and 6th coauthored papers expected by graduation
- **Tools**: Python (Numpy, Pandas, Scipy, SK-Learn, NetworkX, Biopython, PyMOL), Git, Perl, MATLAB, JavaScript, Bash, Adobe Illustrator
- **Funding**: NASA, NSF - independently wrote grant to support summer research at National Taiwan University, including RT flights and housing
- **Collaboration**: Data analysis for experimental labmates
- **Communication**: Presented research as oral and poster presentations at 7 scientific conferences domestically and internationally
- **Mentoring**: Research mentor for undergraduate student. Awarded conference and travel funding

Atomic Interaction Network Analysis of the Ribosome — *Atlanta, GA*
Project for CS 7280 - Network Science — *Fall 2017*
- **Results**: Ribosomal RNA and protein folding domain prediction JuPyteR notebook
- **Tools**: Python (Numpy, Pandas, Scipy, SK-Learn, NetworkX, Biopython, PyMOL), Git
- **Algorithms**: Louvain and Walktrap Community Dectection

Analysis and Interpretation of *Neisseria meningitidis* NGS data — *Atlanta, GA*
Project for BIOL 8803 - Programming for Bioinformatics and BIOL 7210 - Computational Genomics — *Fall 2014 and Spring 2015*
- **Results**: Developed a genome browser of 53 annotated genomes and a typing tool that will identify a species from fasta file inputs
- **Tools**: Python, Perl, Git, *de novo* Genome Assembly, SAMtools, BCFtools, GATK, Kent Source Tree, Bash, JBrowse, AWS

Graduate Teaching Assistant — *Atlanta, GA*
Georgia Institute of Technology — *9 Semesters*
- **Biophysical Chemistry Lab** - CHEM 4582 - 6 semesters - Instrucuted 8 undergraduate students per semester on experimental and computational biophysical chemistry protocols.
- **Macromolecular Structure** - CHEM 6572 - 2 semesters - Graded and instrucuted on the use of a computational modelling program for a class of approx. 25 graduate students.
- **Survey Biochemistry** - CHEM 3511 - 1 semester - Held weekly recitation for approx. 40 undergraduate students. Graded homework and exams.

Undergraduate Research Assistant — *East Lansing, MI; Düsseldorf, DE*
Michigan State University; Heinrich-Heine Universität — *Feb 2010 - May 2012*
- **Project**: Molecular simulations of Mismatch Repair Enzymes MutSα and MutSβ. Coauthored paper
  - **Tools**: Bash, VMD, NAMD
- **Project**: DNA-protein interaction of cis-regulatory elements in ***Flaveria sp.***
  - **Tools**: Molecular clonging, yeast one- and two-hybrid screening, GUS staining, ***A. thaliana, A. tumefaciens***
- **Project**: Metabolic flux analysis of carbon
  - **Tools**: GC-MS, ***Nanochloropsis sp.***
- **Project**: Aquaporin signalling in gametogensis
  - **Tools**: PCR, ***A. thaliana***
- **Project**: Protein-protein interactions in ER to chloroplast lipid trafficking
  - **Tools**: Yeast two-hybrid screening, molecular cloning, ***E. coli***