

Nicholas Attila Kovacs

BIOINFORMATICIST & DATA SCIENTIST

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Profile

A personable and team-oriented computational biologist with an experimental science background graduating from Georgia Tech December 2018 seeking a consultant position at Digital McKinsey beginning in 2019. Team leading experience as a laboratory-course teaching assistant, mentoring experience through graduate-undergraduate mentoring scholarship program, public speaking experience from presentations at international and domestic conferences, and written communication skills sharpened through academic journal article and grant writing.

Education

Ph.D. Bioinformatics GPA: 3.5

GEORGIA INSTITUTE OF TECHNOLOGY

Aug 2013 - Dec 2018

Atlanta, GA

B.S. Biochemistry and Molecular Biology/Biotechnology GPA: 3.3

MICHIGAN STATE UNIVERSITY

Aug 2008 - May 2012

East Lansing, MI

Experience

Graduate Research Assistant

GEORGIA INSTITUTE OF TECHNOLOGY

Aug 2013 - Current

Atlanta, GA

Dissertation: *Data Mining the Atomic Structure of the Ribosome to Unravel the History of Protein Folding*

- **Summary:** Applied structural bioinformatics methods and machine learning algorithms such as clustering to atomic coordinate datasets from over 100 biomolecules composed of 150,000-200,000 atoms to unravel the interrelatedness and origin of life.
- **Results:** Two 1st-author research articles published. 3rd in preparation.
- **Funding:** NASA Astrobiology Institute
- **Collaboration:** Provided computational analysis for coworkers' projects; coauthor of 2 experimental and 4 computational research articles.
- **Communication:** Independently wrote and awarded \$7,000 NSF grant to support summer research in Taiwan. Oral and poster presentations at 7 domestic and international scientific conferences.
- **Mentoring:** Awarded \$2,500 conference and travel funding for mentoring undergraduate student.
- **Courses:** 9 courses in biochemistry, computational biology, statistics, and computer science. Concept-to-Market business short-course.

Atomic Interaction Network Analysis of the Ribosome

COURSE PROJECT FOR CS 7280 - NETWORK SCIENCE

Aug 2017 - Dec 2017

Atlanta, GA

- Collaborated with a team member to apply course concepts and algorithms to 3 atomic interaction networks of the biomolecule, the ribosome, each composed of more than 100,000 edges between approx. 50,000 nodes.
- **Results:** Predicted RNA and protein folding domains within the ribosome by applying community detection algorithms.

Graduate Teaching Assistant

GEORGIA INSTITUTE OF TECHNOLOGY

Aug 2013 - Dec 2016

Atlanta, GA

- **Biophysical Chemistry Lab(CHEM 4582)** - 6 semesters - Instructed ~8 undergraduate students on experimental and computational protocols.
- **Macromolecular Structure(CHEM 6572)** - 2 semesters - Directed ~25 graduate students on the use of computational modelling programs.
- **Survey of Biochemistry(CHEM 3511)** - 1 semester - Guided ~40 undergraduate students to solve homework problems in weekly recitation.

Analysis and Interpretation of NGS Data from CDC

COURSE PROJECT FOR BIOL 8803B - PROGRAMMING FOR BIOINFORMATICS AND BIOL 7210 - COMPUTATIONAL GENOMICS

Aug 2014 - May 2015

Atlanta, GA

- Worked in multidisciplinary teams of biologists and computer scientists to identify pathogens from DNA sequences provided by the CDC.
- Analyzed 97 NGS single-end and paired-end reads of *Neisseria meningitidis*, *Haemophilus influenza*, and *Haemophilus haemolyticus* generated from GAII or Illumina HiSeq/MiSeq instruments.
- **Results:** Developed a typing-tool that identifies the organism and its serotype/serogroup from DNA sequence file inputs and constructed a genome browser of 53 annotated genomes to view annotated genomes.

Skills & Interests

Computational Acumen	Python, R, SQL, Bash, Perl, MATLAB, Javascript, Git, Spark, Tableau, Adobe
Computational Sciences	Structural Bioinformatics, Next-Generation Sequencing, Molecular Dynamics, Drug Docking
Data Science	Machine Learning, Network Science, Statistics, Software Engineering
Experimental Sciences	Molecular Biology, Biochemistry, Organic Chemistry, Analytical Chemistry
Personal Interests	Bodyweight fitness, Nutrition, Snowboarding, Guitar, World Travel, Bachata Dance, Korean-Culture