

MINGZHAO LIU

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SUMMARY OF SKILLS

Programming knowledge in **C, C#, C++, Java, Python, Perl, SQL, MongoDB, HTML, JavaScript, LISP, Prolog**, and **R**

Experienced in working with **Rosetta** protein modeling suite

Experienced in working with **Git** and **Mercurial** distributed version control systems

Experienced in working in **Windows** and **Unix** environments

Effective presenter, communicator, writer, and public speaker

EDUCATION

Ramapo College of New Jersey – Mahwah, NJ

Bachelor of Science: Bioinformatics, May 2016, *Magna cum laude*

Bachelor of Science: Computer Science, May 2016, *Magna cum laude*

RESEARCH EXPERIENCE

A Bioinformatic Approach to Investigate a Relationship between Cis-Regulatory U-Rich and G-quadruplex Motifs Involved in Mammalian Polyadenylation

School of Theoretical and Applied Sciences – Ramapo College of New Jersey

Undergraduate Researcher, Jan. 2014 – July 2016

Developed genome-wide analysis tools using **Java, JavaScript, C++,** and **Python**

- Web service with a **C++** backend and **Python** database access, on a **Node.js** webserver

Performed programmatic alignments of sequence data using Needleman-Wunsch algorithm

Extracted and stored nucleic acid sequence data and annotations using **MongoDB**

Presented research project at Student Research Symposium, MACUB conference, and RNA Conference 2016

Marburg Virus Antibody Modeling using Comparative Modeling

Center for Structural Biology – Vanderbilt University & RosettaCommons

Developer of Rosetta, powerful macromolecule structure prediction and design software

Research Intern, May. 2015 – Aug. 2015

NSF funded research internship through RosettaCommons

Trained to understand Rosetta protein modeling suite and develop algorithms for protein folding

Developed a protocol for efficient large scale comparative modeling of antibodies

- Accesses underlying Rosetta **C++** functions for modeling, **XML** for input of user parameters

- **Python** for integration with PyMOL, **Perl** and **Bash** scripts for increased automation

Benchmarked the efficacy of comparative modeling techniques

Performed statistical analysis on models to determine accuracy

Presented Research at RosettaCON

WORK EXPERIENCE

Alexander Biener, MD – Woodcliff Lake, NJ

Intern, Feb. 2015 – Dec. 2015

Analyze data collected from health studies

Digitize informational pamphlets for electronic distribution

Research HIPAA compliant solutions for remote access

Provide IT support for the office

Equal Opportunity Fund – Mahwah, NJ

Student Instructor, June 2014 - August 2014

Conduct SI Sessions on test preparation, note taking, and study methods and lead review discussions on daily lectures.

Facilitate evening study sessions as part of the EOF Pre-Freshman Study Institute.

Conduct academic study skills workshops.

Facilitate summer reader workshop