Jon Belyeu | Bioinformatician

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Education

Brigham Young University   **Provo, UT**
*BS **Bioinformatics**, Minor: **Computer Science***   *Aug. 2009–April 2016*
GRE 165 Quantitative (95th percentile), 170 Verbal (99th percentile). GPA 3.73/4.00
Selected Courses
  ○ Bioinformatics, Computational Biology, Introduction to Bioinformatics
  ○ Big Data, Algorithm Design & Analysis, Advanced Programming Concepts, Internet Programming, Discrete Structure, Data Structures
  ○ Genetics, Molecular Biology, Evolutionary Biology
  ○ Statistics for Engineers and Scientists, Organic Chemistry, Calculus

Experience

Research

Perry Ridge, Ph.D., Brigham Young University   **Provo, UT**
Research Assistant, Department of Biology   *Sept. 2014–Present*
Computational research in genetics/genomics
Projects and Skills:
  ○ Building phylogenetic trees from species sets
  ○ Performing evolution-based analyses of synonymous codon bias
  ○ Graphically analyse data with R
  ○ Using supercomputer resources for large-scale analyses
  ○ Developing SelecT (Selection Test):
  – Programming of SelecT in Java
  – Modifying SelecT for use generalization
  – Analyzing genomes using SelecT

Richard Gill, Ph.D., Brigham Young University   **Provo, UT**
Research Assistant, Department of Biology   *Apr. 2015–Present*
Ecological data pipeline development
Projects and Skills:
  ○ Built data pipeline for automated or manual storage of ecological time-series data
  ○ Managing Ubuntu server and MySQL database of time-series data
  ○ Performing time-series data analyses and quality control

Industry

Center for Teaching and Learning, Brigham Young University   **Provo, UT**
Web Developer   *Apr. 2014–Sept. 2015*
Developer for the BYU course management website
Projects and Skills:
  ○ Back-end web development
  ○ Some front-end web development
  ○ Used MySQL database
  ○ Led individual projects and team projects

Department of Computer Science, Brigham Young University   **Provo, UT**

Teaching Assistant   *Jan. 2014–April 2014*

Instruction in basic programming skills

Projects and Skills:

- Tutored in C++
- Gave group presentations on project specifications
- Graded assignments
- Evaluated course materials

Department of Biology, Brigham Young University   **Provo, UT**

Teaching Assistant   *Aug. 2014–Dec. 2014*

Instruction in basic principles of biology

Projects and Skills:

- Presented group review sessions
- Tutored individuals
- Graded assignments

The Church of Jesus Christ of Latter-day Saints   **Barranquilla, Colombia**

Missionary   *2010–2012*

Publications

In Draft

Hayden Smith, M.T.W. Ebbert, **Jonathan Belyeu**, Brandon D. Pickett, Levi Morrison, John S.K. Kauwe, Perry G. Ridge. Selection Test: a powerful, high-resolution selection scanning tool to identify genomic selection signals using next-generation sequencing data. 2015.

Posters

Jonathan Belyeu, Artem Golotin, Ashlee Gerlach, Mark Ebbert, John Kauwe, Perry Ridge. Computationally locating selection signals in diploid genomes with next-generation sequencing data. December 2015.

Skills and Qualifications

Programming Languages

- Python & Biopython
- C/C++
- C#
- Java
- Bash/Shell
- R

Web Technologies

- Javascript
- JQuery, NodeJS
- AngularJS, MustacheJS
- HTML5/CSS

Bioinformatics Skills

- Algorithm development
- Computational tool development
- Parallel processing
- Supercomputing
- Database development
- NCBI tools

Data Science Technologies

- Hadoop MapReduce
- Apache Ignite
- Apache Kafka
- Weka

Typesetting Languages.......................
- LaTeX

Database Technologies........................
- MySQL
- SQLite
- MongoDB

Versioning Technologies.......................
- Git
- Subversion

Operating Systems...........................
- Linux
- Windows
- Mac OS X

Languages

English: Native

Spanish: Fluent *2 years of full immersion*

Portuguese: Minimal *Reading, some speaking and understanding*

Interests

Mountaineering:

- Mt. Timpanogos Summit July 2013
- Mt. Timpanogos Summit September 2014
- Mt. Timpanogos Summit July 2015
- Y Mountain Summit August 2015

Martial Arts:

- BYU Martial Arts class Fall 2009
- BYU Brazilian Jiu-Jitsu club 2010, 2013

References

Perry G. Ridge, Research Mentor
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Development and experience. I have developed a deep interest in science in my undergraduate experience at BYU through excellent coursework and undergraduate research opportunities. I have a passion for the field of bioinformatics and have taken advantage of many opportunities to grow, going beyond the requirements of my major course of study with advanced computer science and chemistry classes in addition to putting considerable effort into research projects with labs directed by several faculty members.

I have had unique chances to prepare for graduate studies through my research as an undergraduate and have been able to work both as a leader and as a follower. I have had success working with teams and peers and often find opportunities to help others to reach their potential as scientists. I believe that the best success comes through maintaining a friendly working environment, where skills of individuals can benefit the group as a whole and all members of a team feel needed and useful.

Interests and Goals. I have wide range of interests and have worked with researchers focusing on proteomics/lipidomics, human genetics, environmental ecology, and seismic data mining. My greatest interest is in software and algorithm-oriented research, building or improving tools to help the progress of the scientific community grow, although I also have an interest in learning from data and finding results to build understanding of specific biological problems.

I have had many other opportunities to become a better scientist and more capable person, including preparing and submitting a proposal for a research grant, assisting in the teaching of entry-level biology and computer science classes, and working as an industry web developer. These opportunities have taught me to work well with people and to think for myself. I have learned that knowledge is a set of tools, whether they be communication skills, study habits, programming languages, or mathematical concepts. I intend to make my own toolset an effective one and to use it for the promotion of knowledge and for the success of those around me and the scientific community at large.

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