JAMES T. MORTON

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EDUCATION

Graduate	University of Colorado, Boulder
2014 - Present	PhD student in Computer Science
2014 - Present	IQ Biology student
Undergraduate	Miami University
2010 - 2014	B.S. in Computer Science
	B.S. in Electrical Engineering
	B.S. in Mathematics and Statistics
	B.S. in Engineering Physics
	GPA: 3.74/4.0
Study Abroad	Spring 2012 Hong Kong University of Science and Technology

HONORS

- **NSF Graduate Fellow**, 2014 - Present
- **Goldwater Scholar**, 2013
- **Cum Laude**, Miami University Computer Science, 2014
- **Cum Laude**, Miami University Electrical Engineering, 2014
- **Harrison Scholar**, Miami University, 2010-2014
- **First place**, Institute of Navigation (ION) Autonomous Snow Plow Competition, 2014
- **Best Presentation and Best Report**, ION Autonomous Snow Plow Competition, 2014
- **NSF REU**, Cold Spring Harbor Laboratories, Summer 2012
- **Provost Academic Achievement Award**, Miami University, 2012
- **Ohio Space Grant Scholar Award**, NASA, 2012 - 2014
- **Dean's List**, Miami University, 2010-13
- **R.L. Edwards Scholarship**, Department of Physics, Miami University, 2013
- **Mary Jeannette and Clifford Harvey Scholarship**, Mathematics Department, Miami U., 2013
- **Mary Jean and Joseph R. Priest Scholarship**, Department of Physics, Miami University, 2012
- **President List**, Miami University, 2010-11
- **Nestle Scholar**, Computer Sci. and Software Eng. Dept, Miami University, 2011
- **Faculty Prize**, Department of Mathematics, Miami University, 2011
- **Joseph A. Culler** Award, Department of Physics, Miami University, 2011
- **R.L. Edwards Scholarship**, Department of Physics, Miami University, 2011
- **Joseph A. Culler Award**, Department of Physics, Miami University, 2010
- **NSF Travel Grant**, Coupling, Energetics, & Dynamics of Atmospheric Regions workshop, 2010
- **Wright Scholar**, Air Force Research Laboratory, Wright Patterson Air Force Base, 2009

EXPERIENCE

Research Experience

Research Assistant Miami University, OH , Summer 2014

- Worked with Dr. Iddo Friedberg
- Developed software tool to identify bacteriocin associated gene clusters

Data Scientist Intern Johns Hopkins University, MD , Summer 2013

- Worked with Dr. Benjamin Langmead to develop scalable RNAseq Analysis software
- Developed spliced alignment algorithm using the Hadoop Framework.

Undergraduate Research Program Cold Spring Harbor Laboratories, NY , Summer 2012

- Worked with Dr. Thomas Gingeras and Dr. Alex Dobin
- Developed software that maps reads between the reference and personal genome
- Studied Allele Specific Expression in a personal genome

Research Assistant Miami University, OH , Spring 2011 - Fall 2011

- Worked with Dr. John Karro and Dr. Chun Liang
- Designed Hidden Markov Model software to identify poly(A) tails in RNAseq data
- Designed Profile Hidden Markov Model software to identify adapter sequences in RNAseq data
- Contributed HMMER parser to Biopython

Research Assistant Miami University, OH , Summer 2010

- Worked with Dr. Qihou Zhou on processing incoherent scattering radar data
- Developed signal processing algorithms to extract atmospheric parameters from this data

Engineering Aide Wright Patterson Air Force Base, OH, Summer 2010

- Designed and implemented a time difference of arrival localization algorithm
- Programmed USRP using GNU radio for signal transmission and receiving

Wright Scholar Wright Patterson Air Force Base, OH, Summer 2009

- Studied cognitive radio, radar, and GPS concepts and techniques

Teaching Experience

Teaching Assistant Miami University, OH, Spring 2011

- Assisted Professor Mostafa Modirrousta in teaching of two sections of Intro to Engineering labs
- Graded lab reports for a class of 32 students

Teaching Assistant Miami University, OH, Spring 2008

- Assisted Professor Felice Marcus to teach a class of Chinese engineers English

Class Projects

Autonomous Snowplow Competition St. Paul MN, January, 2014

- Analyzed robot kinetics
- Developed and tuned control algorithms and sensor fusion algorithms

Intelligent Ground Vehicle Competition Rochester, MI , Summer 2013

- Developed algorithms to process stereo camera images
- Maintained ROS source code

SKILLS

Technical Skills

• Python	• C/C++	• Java	• LaTeX
• Matlab	• R	• Unix	• SQL
• ROS	• Hadoop	• CUDA	• git

Languages

- Chinese – Working Proficency
- English – Native speaker

PUBLICATIONS

- Morton, J., Abrudan, P., Figuegoaa, N., Liang, C., Karro, J.
  SCOPE++: Sequence Classification Of homoPolymer Emissions, *Genomics*, 2014

PRESENTATIONS

- Morton, J., Freed, S. Lee, S. Friedberg, I. A pipeline for Identifying Bacteriocin-Associated Gene Clusters. ISMB Boston, 2014
- Morton, J., Freed, S. Lee, S. Friedberg, I. Discovering the Next Antibiotic
  Ohio Space Grant Consortium, Cleveland OH, 2014
- Morton, J., P., Abrudan, J. Karro, C. Liang , Sequence classification of homopolymer emissions (SCOPE), Great Lakes Bioinformatics Conference, Pittsburgh, PA, 2013
- Morton, J., P., Abrudan, J. Karro, C. Liang , Sequence classification of homopolymer emissions (SCOPE), Ohio Space Grant Consortium, Cleveland OH, 2013
- Morton, J., P., Abrudan, J. Karro, C. Liang , Sequence classification of homopolymer emissions (SCOPE), IEEE 2nd International Conference on Computational Advances in Bio and Medical Sciences, ICCABS 2012, Las Vegas, NV, February 2012
- Morton, J., J. Karro, C. Liang, A novel approach for identifying poly(A) tails in raw cDNA sequence data using General Hidden Markov Models, Genome Informatics Cold Spring Harbor, NY, November 2011.
- Morton, J., C., Liang, and J. Karro. scrapplusplus – SCRAP
  Sequence Cleaning and Removal of Adapter Sequences using Profile HMMs
  Google Project Hosting. Retrieved from http://code.google.com/p/scrapplusplus, 2012
- Morton, J., J. Karro, and C. Liang. scopeplusplus – SCOPE
  Sequence Classification Of homoPolymer Emissions. Google Project Hosting.
  Retrieved from http://code.google.com/p/scopeplusplus, 2012

ACTIVITIES

- Sigma Pi Sigma, Spring 2014
- Tau Beta Pi, Spring 2014
- Eta Kappa Nu, Spring 2014
- National Society of Collegiate Scholars, Fall 2012 - Spring 2013
- Miami University Collegiate Chorale, Fall 2012.
- Institute of Navigation Autonomous Snowplow Competition support team, 2010-Present
- IEEE Miami Student Chapter Treasurer, Fall 2011- Spring 2012
- Miami University Mens Glee Club, Fall 2011, Spring 2014
- ACM Programming Contest, Fall 2011, Fall 2012
- International Global Game Jam, Spring 2011
- Miami University Symphony Orchestra, Spring 2010, Fall 2009