
EDUCATION

Stanford University Palo Alto, CA Ph.D. Candidate

Candidate for a Doctorate of Philosophy in Applied Physics. GPA: 3.42/4.0.

- *Mark Schnitzer Lab.* Studying learning and memory processes *in vivo* using fluorescence microendoscopy in mice. Applying novel techniques to perturb neural circuitry. Working primarily with visual and motor assays. Supported by a research assistantship and Bio-X Graduate Student Fellowship.
- Technical Courses: Engineering Optics, Advanced Imaging Lab in Biophysics, Computational Neural Networks, Large-Scale Neural Modeling, Modern Applied Statistics: Learning, Cellular Biology, Biological Macromolecules.
- Physics Courses: Classical Mechanics, Electricity and Magnetism I and II, Quantum Mechanics I and II, Statistical Mechanics.

The Massachusetts Institute of Technology Cambridge, MA Class of 2007

Bachelor of Science Degree in Physics. Minors: Mathematics and the Sloan School of Management. **GPA: 4.70/5.0.** Physics GRE: 930/990 (93%). GRE: 800/800 math (94%), 630/800 verbal (90%), 5.5/6 analytical writing (87%). Thesis: *Charged Multiplicity Measurement for Simulated p+p Events in the Compact Muon Solenoid (CMS) Detector.*

- Technical Courses: Experimental Physics, Physics of Solids, Analysis [Math], Numerical Analysis, Linear Partial Differential Equations, Applied Statistics, Optimization.
- Activities: Sigma Chi Fraternity (President).

EMPLOYMENT EXPERIENCE

Decisive Analytics Corporation Arlington, VA 2007

Intern. Led team implementing novel solution to multiple-target tracking problem using metropolis sampling and Kalman filtering in Java with Swing visualization and multi-threading.

- Presented algorithm and results in hour long colloquium to division, including a live demo of the software

European Organization for Nuclear Research (CERN) Geneva, Switzerland 2006 – 2007

Paul E. Gray Research Fellow. Performed feasibility study for a novel method of measuring the charged multiplicity of p+p events in CMS. Presented results to CMS heavy-ion group as well as MIT students, parents, and alumni. Developed method into undergraduate thesis and for future work in soft physics group.

European Organization for Nuclear Research (CERN) Geneva, Switzerland 2005 – 2006

Undergraduate Researcher. Designed and administered hardware testing application for CMS Data Acquisition (DAQ) group; paced 1,000 electrical components through multi-stage tests, reported daily progress to group.

The Massachusetts Institute of Technology Cambridge, MA 2004 – 2007

Tour Guide. Represented MIT to thousands of potential students, parents, and VIPs.

Trifacta Technologies, Incorporated Allentown, PA 2000 – 2004

Intern. Mastered many technologies to help customers implement low-cost high value-added IT solutions.

- Spearheaded database development for redesign of donation website CampaignSolutions.com; clients included George W. Bush's record-breaking 2004 campaign and John McCain's 2004 primary run
- Assembled crucial Oracle database reporting elements for a major US pharmaceutical company to improve their drug distribution reporting system

EDUCATOR EXPERIENCE

MIT Department of Physics Cambridge, MA 2006

- *Laboratory Assistant.* Prepared the newly-renovated Junior Laboratory facilities for the fall and revised lab guides

Boston Chung Educational Services, Incorporated Newton, MA 2004 – 2005

Tutor. Tutored and mentored gifted high-school ESL students in math and physical sciences.

Other Educator Experience

Cambridge, MA

2005 – 2007

- Energized ninth graders as a physics student teacher at Arlington High School
- Certified public high school teacher in Massachusetts, specializing in physics
- Led mechanics review sessions for freshmen for the MIT Academic Resource Center

TECHNICAL SKILLS

- *Extensive Experience.* L^AT_EX, Matlab, Sun Certified Java 2 Programmer, XHTML, CSS, Javascript, PL / SQL, Database Administration (Oracle, DB2, MySQL), Paint Shop Pro.
- *Familiarity.* Linux, Autodesk Inventor (CAD), Code V (Optics Design), Adobe Illustrator and Photoshop, Perl, C++, ROOT, Mathematica, statistical methods, Apache, PHP, ASP.

LEADERSHIP

- Assessed state of MIT advising in report and met with administrators to advocate for students on the Undergraduate Association (UA) Student Committee on Education Policy (SCEP)
- Chaired committee for MIT's Derby Days, a philanthropy festival which raised over \$1,000 for the Children's Miracle Network
- Oversaw Sigma Chi Fraternity in award-winning terms as Vice President and President
- Organized Sigma Chi's 125th Anniversary Reunion; 25% of alumni attended (over 350 guests)

ACTIVITIES / HONORS

Bio-X Graduate Student Fellowship (2008 – 2011), MIT Fraternity, Sorority, and Independent Living Group “Senior Legacy” Award (2007), Sigma Chi International Balfour Award Finalist (2007), Sigma Chi Grand Consul Citation (2007), Eton College Annenberg Fellowship Finalist (2007), Paul E. Gray Research Fellowship (2006).

PUBLICATIONS

- Brian A. Wilt, Laurie D. Burns, Eric Tatt Wei Ho, Kunal K. Ghosh, Eran A. Mukamel, and Mark J. Schnitzer. Advances in light microscopy for neuroscience. *Annual Review of Neuroscience* (2009). In press.

REFERENCES

Available on request.