

# English Resum

229 Vassar Street · Cambridge, MA 02139 · 888.234.9061 · contact@english

---

## **EDUCATION** Massachusetts Institute of Technology – Cambridge, MA

UNDERGRADUATE Class of 2011; 5.0/5.0 GPA

Candidate for Bachelor of Science in Physics, Mathematics

### Relevant **Physics**

Course Work Experimental Physics I & II  
Quantum Physics I, II, & III  
Classical Mechanics I & II  
Electricity and Magnetism I & II  
Statistical Mechanics  
Relativity  
Vibrations & Waves  
The Early Universe

### **Mathematics**

Discrete & Continuous Applied Mathematics  
Linear Algebra  
Complex Variables  
Differential Equations  
Linear Partial Differential Equations  
Probability & Statistics

## HIGH SCHOOL **Lawton Chiles High School – Tallahassee, FL**

High School Diploma, Class of 2007

Summa Cum Laude; National Merit Finalist; 4.72 GPA

## **RESEARCH** **UROP**

May 2010 – Present

**EXPERIENCE** Prof. Max Tegmark, MIT

Research in preparation for senior thesis in the Omniscope project, a large-scale telescope array that relies on Fast Fourier Transform algorithms (FFTs) to map the entire sky at lower cost than traditional telescopes. Test and integrate analog and digital measurement chain in preparation for full-scale deployment.

## **Summer Research Experience for Undergraduates (REU)**

June – August 2009

Prof. Bruce Winstein, University of Chicago

Wrote data quality statistics in Python and MySQL for the CMB polarization data from the Q/U Imaging Experiment (QUIET) telescope. Calculated the systematic bias to theoretical CMB power spectra due to the experiment's optical beam and polarimeter using multipole expansion and FFT convolution. Computed systematic biases for use in QUIET's Phase II NSF proposal.

## **National High Magnetic Field Laboratory REU**

June – August 2008

Prof. Irinel Chiorescu, Florida State University

Investigated resonance phenomena of qubits in MATLAB for the Quantum Spin Dynamics Group. Developed a simulation of spin-spin coupling dynamics in Electron Paramagnetic Resonance using MATLAB. Studied the effect of the detuning from resonance on the Rabi oscillations of an isotropic coupled system, as well as systems with anisotropy.

## **SKILLS** **Programming Languages & Computer Programs**

MATLAB, Python, IDL, ROOT, MySQL, LaTeX  
Excel, Adobe Illustrator