DAVID TSE

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EDUCATION

Massachusetts Institute of Technology   Cambridge, MA
Bachelors of Science, Materials Science & Engineering   June 2013 (Expected)

GPA: 4.7/5.0; SAT Q: 780 V: 580; Relevant courses: Energy Projects Laboratory; Materials Project Laboratory; Organic Chemistry I & II; Mechanical Properties of Materials; Intro. to Ceramics; Economic & Environmental Materials Selection

WORK EXPERIENCE

3M   Maplewood, MN
Materials Engineering Intern, Display & Graphics Division   June 2012- August 2012
- Developed characterization methods to quantitatively, via thermogravimetric analysis (TGA), and qualitatively, via nuclear magnetic resonance (NMR), analyze functionalized silica nanoparticles to expedite R & D efforts by 3 months
- Evaluated the effects of time, temperature, silane type and size on silica nanoparticle functionalization for the development of scratch & abrasion resistant coatings used for optical display

Navigant Consulting   Burlington, MA
Energy Consultant Intern   January 2012
- Calculated weighted averages of hourly electricity generation costs for power plants in 27 electricity grid sub-regions
- Discovered 4 major flaws in impact metric reviews of smart grid investment grant recipients and recommended an improved strategy for accurate reporting focused on providing relevant examples to recipients

Levant Power   Cambridge, MA
Business Intern   September 2011- December 2011
- Contacted potential customers and conducted competitive analysis, market research, in a team of 3, for an MIT-affiliated startup's OceanGen technology (a wave energy harvesting system)
- Coordinated an ongoing collaboration with Woods Hole Oceanographic Institute as a buoy testing site

Procter & Gamble   Boston, MA
Products Research Engineering Intern, Gillette Venus   June 2011- August 2011
- Helped set the vision for Venus razor product growth by identifying drivers of consumer appeal via regression analysis
- Recommended a plan to predict naïve consumer test results that can help the business save significant time and money, as naïve consumer tests cost $80k and take 3 months, whereas in-house descriptive panels cost $4k and takes 2 weeks

LEADERSHIP & ACTIVITIES

International Development Club   Cambridge, MA
Director for the Americas   April 2010-January 2012
- Collaborated, in a team of 3, with the Nanubhai Education Foundation to report on women's education barriers in India
- Spearheaded American-based NGO and student team recruitment efforts where >200 NGOs were contacted, which led to the selection of 2 projects with teams of 4 students each
- The Jamaican team taught 47 teachers in 3 weeks and received completion certificates from the Ministry of Education

China Development Initiative   Cambridge, MA
Campus Events Chair, Mentor   January 2012-present
- Designed a curriculum, in a team of 10 MIT students, for a 5-day leadership workshop taught to 30 students in China
- Helped interview 80 students, then train 20 selected students in preparation for summer leadership workshops in China

RESEARCH EXPERIENCE

MIT Department of Mechanical Engineering   Cambridge, MA
Undergraduate Researcher, Device Research Laboratory, under Andrej Lenert   September 2011- February 2012
- Optimized silica coverage of silver nanoparticles for enhanced solar thermal photovoltaic cell efficiency
- Characterized the morphology and size of nanoparticles via transmission electron microscopy

MIT Koch Institute for Integrative Cancer Research   Cambridge, MA
Undergraduate Researcher, Immunobioengineering Group, under Dr. Jewell   January 2010- June 2011
- Tested the effects of incorporating DNA on polymer-based microparticles and nanoparticles, while maintaining defined particle-size distributions, to characterize the resulting *in-vivo* immune response

AWARDS/RECOGNITION

MIT Sigma Epsilon Balanced Man Scholarship Semifinalist (2011) • DISCO Secret Clearance (2011) • Gates Millennium Scholar (2009) • Asian & Pacific Islander American Scholarship (2009) • Wal-Mart Scholarship (2009)

SKILLS

Research: Statistics • Excel VBA • Java • Mathematica • TEM • Nanosphere Fabrication • Ellipsometry • AFM • DLS • TGA

Language: 2 years of study in Mandarin • Currently studying Brazilian Portuguese • Basic Cantonese