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----------------------------------- Mike Zhong ---------------------------------
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EDUCATION

Aug 2013 - May 2017 (Expected)
  B.A., Physics, University of California, Berkeley

RESEARCH EXPERIENCE

2016 - Present   ALPHA Collaboration at CERN
  Wrote simulations for trapped antihydrogen atoms in octupole magnetostatic
  antimatter traps. Analyzed resulting chaotic trajectories, specifically the
  coupling between axial and transverse modes of energy. Designed algorithm to
  quantify coupling time for unevenly-spaced time series. Contributed to day-
  to-day experiment operations at CERN.

2015   Mrsic-Flogel Lab at University of Basel
  Designed LabVIEW data acquisition software enabling real-time data readout
  on a widefield microscope for closed-loop applications. Prototyped touchpad
  interface software to allow a mouse to control its position in virtual
  reality.

2014 - 2015   Theunissen Lab at UC Berkeley
  Studied spectral-temporal features of timbre of Western musical instruments.
  Implemented decoding algorithm to transform Modulation Power Spectrum (2DFT
  of Gaussian-Windowed Spectrogram) into audio waveform.

PUBLICATIONS -- IN PREPARATION

Axial-transverse energy coupling times for antihydrogen trajectories in
magnetostatic traps, Zhong, M. and Fajans, J. To be submitted Dec 2016.

CONFERENCE ACTIVITY

Characteristic coupling time between axial and transverse energy modes for
  antihydrogen in magnetostatic traps, Zhong, M. and Fajans, J., APS Division
  of Plasma Physics, v. 61, no. 18, 2016.

GRANTS, AWARDS AND HONORS

2016   UC Berkeley Summer Undergraduate Research Fellowships L&S Fellow
2013 - 16 College of Letters & Science Dean's Honors

TEACHING AND MENTORING EXPERIENCE

UC Berkeley, Undergraduate Student Instructor
  Sp 2016   Physics for Scientists and Engineers - Intro to Mechanics
  Fa 2015   Discrete Mathematics and Probability Theory

REVERSE ENGINEERING PROJECTS

2015 – 2016   Cal1ID Radio Frequency ID (RFID) Reader/Spoofer
  Originally for UC Berkeley Instrumentation Lab course final project, built
  circuit to communicate with Cal1ID cards via RFID. Inferred ID number
  encoding protocol from recorded signal (Manchester encoding; frequency-shift
  keying). Built and installed reader for housemates to unlock front door of
  housing co-operative, and spoofer to open locked campus doors.

2015   Touchpad Interface Software
  Injected C# code into propriety Windows touchpad GUI application to send
  real-time touchpad data via UDP packets. For 2015 Summer lab internship in
  the Mrsic-Flogel lab.

2015   i>Clicker
  With a couple of friends, pulled the assembled HEX code from the classroom
  voting i>Clicker devices. Identified the basic structure of the ~2000 lines
  of code, and changed a dozen lines so that clicker would (1) broadcast a
  different ID number for every vote, and (2) send unlimited votes per click
  (around 40 votes per second). Used for prank: tinyurl.com/2626votes and
  tinyurl.com/2626votes2 .