Bret A. Comnes
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Education

- **Bachelor of Science in Physics** August 2006 - May 2011
  Humboldt State University (HSU) *Arcata, CA*
  - Physics Coursework: Thermodynamics (Schroeder), Analytical Mechanics (Thornton), Electricity & Magnetism (Griffiths), Quantum Mechanics (Liboff, Griffiths), Optics (Hecht), Physics of Stars & Planets, Galaxies & Cosmology, Electronic Instrumentation (Horowitz, Hill), Scientific Programming
  - Mathematics Coursework: Partial Differential Equations, Vector Calculus, Linear Algebra

Research Experience

- **Undergraduate Research Assistant** May 2009 - September 2011
  HSU Gravitational Research Laboratory *Arcata, CA*
  - Assisted with Professor C.D. Hoyle's research to test the Weak Equivalence Principal and gravitational inverse-square law at sub-millimeter distance scales.
  - Responsibilities included research and development of lab instrumentation, custom data acquisition and automation applications, electronic circuit design, optical instrumentation and signal processing systems for use inside of the experiment's vacuum chamber.
  - Managed the scheduling and collaboration tools used to organize the students participating in the project.
- **Undergraduate Researcher** November 2009
  Undergraduate Project at the Arecibo Observatory *Arecibo, Puerto Rico*
  - Participated as an undergraduate researcher in a funded trip to the Arecibo Observatory to assist with observations for the ALFALFA survey.
  - Responsibilities included operating the one of the world's largest radio telescopes, data analysis using IDL and working live on scheduled research equipment.

Publications

- **"Sub-millimeter Positioning and Sensing for Short-Range Gravity Tests"** 2011
  Proceedings of the 25th National Conference on Undergraduate Research (NCUR) *Ithaca, NY*
  - Peer reviewed paper to accompany a presentation given at the 2011 National Conference of Undergraduate Research.

Recent Work Experience

- **Academic Assistant** January 2009 - May 2011
  Humboldt State University *Arcata, CA*
  - Graded student homework and lab write-ups for an introductory electronics course for ∼60 undergraduate physics and engineering students.
  - Responsibilities included understanding the range of solutions to a given problem, applying a grading rubric to the work, entering grades into a database, managing a course wiki and following privacy guidelines.
- **Premium Food and Retail Service** June 2009 - September 2011
  Arcata Scoop (Premium Organic Ice Creams) *Arcata, CA*
  - Responsibilities included opening and closing of the store, filling customer orders, maintaining a balanced register, securing cash receipts, training new employees and providing customer service and information.

- **Climbing Wall Attendant** August 2007 - June 2009
  HSU Student Recreation Center *Arcata, CA*
  - Attended to the operation and safety of the largest indoor climbing wall in Humboldt County.
  - Responsibilities included assessing the safety training and skills of the gym's patrons in order to maintain a safe climbing environment, hardware maintenance and rental management and route setting.
- **Park Aide** Summer 2008
  California State Parks *Lake Tahoe, CA*
  - Issued park day passes and campground permits and provided information and rules to the D.L. Bliss State Park visitors.
  - Responsibilities included general rule enforcement; campground management; and the designing, organizing and presentation of the park's Junior Ranger program.
- **Assistant Electrician** Summers 2002 - 2005
  Marin Shakespeare Company *San Rafael, CA*
  - Designed and constructed the outdoor theater lighting and sound systems at Dominican University's 500+ seat Forest Meadows amphitheater.
  - Assisted with set construction, painting and light cue programming.

Skills

Operating Systems, Languages, & Applications

- Proficient: Mathematica, LabVIEW, Windows, Mac OS X
- Knowledgeable: LaTeX, Git, Microsoft Office, SolidWorks
- Familiar: Assembly, C, Arduino, VISA/GPIB, Linux, Apache, Python, Ruby, HTML/CSS

Lab Skills: Oscilloscopes, function generators, lock-in amplifiers, National Instruments hardware, optical systems, lasers, motion control, instrumentation & part design, PCB & circuit design, capacitive sensors, piezo electric actuators, general workshop equipment.

Miscellaneous: Demonstrated proficiency with public communication skills. Excellent troubleshooting and debugging skills. Adept at learning new languages and application suites. Local and remote collaborative skills. Effective at teaching others.

Interests

Academic: Applied physics, optics, QM, metrology, microscopy, gravity, embedded systems, computer science.

Personal: Rock climbing, bicycles, photography, electronic music, electric bass, radio DJing, web development.

References

- Available Upon Request