

# Richard Davis

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## Education

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- 2011 **GRE**  
Perfect Score in Math and Verbal (170 in both), 5 in writing (out of 6)
- 2004 **Freie Universität** *Berlin, Germany*  
Wissenschaftliches Schreiben (Academic Writing)  
• Passed the DSH (German language examination for admission to a German higher education institution)
- 1999–2003 **University of Virginia** *Charlottesville, Va*  
B.A. Philosophy, Studio Art; Minor Physics  
• Echols Scholar

## Professional Experience

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- 2007–Present **Software and Firmware Engineer** *Current Designs, Inc.*  
Worked on a two-year project developing firmware for the company's flagship device, the 932. Utilized all the capabilities of the embedded microcontroller, which interfaced with a variety of ICs and communicated over USB, serial, parallel, and optical connections. The 932 enumerated as a composite USB device, appearing as a HID keyboard, mouse, and joystick simultaneously. Wrote all firmware in pure assembly to save memory and maximize execution speed.
- Developed and maintained firmware and hardware for five devices, including a fiber-optic bundle tester, a USB button box with high-precision timing, a PIC hardware programmer, and a stepper motor fiber polisher.
- Designed and coded a Python testing suite to check the USB, serial, parallel, and optical function of our devices. Used ctypes to wrap libusb. Built the GUI using wxPython.
- Developed a Python program (with GUI) to update users' firmware over USB. To simplify installation, generated binaries using pyInstaller and py2app and created installers for Windows 7 64-bit, Windows XP 32-bit, and OS X.
- Ported most of the company's C software to Python. Wrote a C library and .mex file to add joystick support to GNU/Octave on Linux. Administered an Ubuntu Server running our internal wiki, Subversion, and Redmine.

- 2007–2010 **Co-Founder and Co-Director** *PIFAS*  
 Co-Founded and co-directed the Philadelphia Institute for Advanced Study (PIFAS), an open, free educational and cultural center that grew to include over 80 members. Written up in the New York Times, Art in America, Time Out New York, The Artblog, and The Philadelphia City Paper.
- Taught Engineering, German, and Philosophy courses, handled day-to-day affairs (rent collection, building maintenance), administered the international artist residency, helped design and maintain the website in Ruby on Rails, and hosted lecturers from institutions including The Princeton Institute for Advanced Study, The University of Pennsylvania, UC Berkeley, Haverford, the NSA, and the ACLU.
- 2005–2007 **Flash Developer and Project Manager** *Apex Learning*  
 Led a geographically dispersed team of three flash developers and an illustrator. Responsible for all the interactive and visual content in an online chemistry course. Worked under tight deadlines and high pressure. Drew high praise at the culmination of the project from the head Chemistry Producer. Proficient in Actionscript and, by extension, Javascript.

## Presentations, Conferences, and Affiliations

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- 2009–2011 **Neuroscience**, *Attendee*.
- 2011 **PsychoPy Workshop/Conference**, *Attendee*, Yale.  
[Link to Webpage](#)
- 2007–2010 **The Philadelphia Institute for Advanced Study (PIFAS)**, *Co-Founder and Co-Director*.  
[Link to Webpage](#)
- 2007–2010 **Philosophical Research Group**, *Project Member*, PIFAS.  
[Link to Webpage](#)
- 2008–2010 **International Artist Residency**, *Director*, PIFAS.  
[Link to Webpage](#)
- 2008 **Dewey, Play, and PIFAS**, *Lecturer*, Academic Aesthetic Breakout Session.  
[Link to Overview](#)
- 2008 **Engineering Group**, *Director and Lecturer*, PIFAS.  
[Link to Webpage](#)
- 2007 **German Group**, *Director and Lecturer*, PIFAS.  
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## Skills

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- Python, C, PIC Assembly, Javascript, PHP, Ruby, HTML/CSS, SQL, Octave
- Emacs, Unix/Linux
- $\text{\LaTeX}$
- Subversion, Git, and Redmine
- PCB layout and schematic drawing, Fiber Optics, uarts, op amps, digital pots, transceivers, shift registers, photodiodes, optical triggers, OLED displays
- German (fluent), Spanish (advanced)