

Chethan Pandarinath

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Education

- 2003-Present** **Cornell University**, Ithaca, NY
M.S./Ph.D. Candidate, Electrical Engineering
Expected graduation: Dec 2010
- 2006** **Marine Biological Laboratory**, Woods Hole, MA
Methods in Computational Neuroscience
- 1998-2002** **North Carolina State University**, Raleigh, NC
B.S. Computer Engineering, B.A. Physics,
B.S. Science, Technology, and Society, Magna Cum Laude

Publications

- **C. Pandarinath**, J.D. Victor, S. Nirenberg (2010). Symmetry breakdown in the ON and OFF pathways of the retina at night: functional implications. *Journal of Neuroscience*, July 28; 30(30):10006-14.
- **C. Pandarinath**, I. Bomash, J.D. Victor, G.T. Prusky, W.W. Tschetter, S. Nirenberg (2010). A novel mechanism for switching a neural system from one state to another. *Frontiers in Computational Neuroscience*, Mar 4:2.
- K. Dedek, **C. Pandarinath**, N.M. Alam, K. Wellershaus, T. Schubert, K. Willecke, G.T. Prusky, R. Weiler, S. Nirenberg (2008). Ganglion cell adaptability: Does the coupling of horizontal cells play a role? *PLoS ONE*, 3(3): e1714.
- B.J. Coppa, C.C. Fulton, S.M. Kiesel, R.F. Davis, **C. Pandarinath**, J.E. Burnette, R.J. Nemanich, D.J. Smith (2005). Structural, microstructural, and electrical properties of gold films and Schottky contacts on remote plasma cleaned, n-type ZNO{0001} surfaces. *Journal of Applied Physics*, 97:103571.
- W.J. Mecouch, B.P. Wagner, Z.J. Reitmeier, R.F. Davis, **C. Pandarinath**, B.J. Rodriguez, R. J. Nemanich (2004). Preparation and characterization of atomically clean stoichiometric surfaces of AlN(0001). *Journal of Vacuum Science & Technology A: Vacuum, Surfaces, and Films*, 23:1.

Presentations

- S. Nirenberg, **C. Pandarinath**, I. Bomash, J.D. Victor, G.T. Prusky, W.W. Tschetter (2010). A novel role for gap junction coupling: a mechanism for allowing neural networks to change states. *Association for Research in Vision and Ophthalmology*, Fort Lauderdale, FL (Poster)
- **C. Pandarinath**, J.D. Victor, S. Nirenberg (2009). Symmetry breakdown in the ON and OFF pathways of the retina at night: functional implications. *Society for Neuroscience*, Chicago, IL (Poster)
- S. Nirenberg, **C. Pandarinath**, I. Bomash, J.D. Victor, G.T. Prusky, W.W. Tschetter (2009). A novel role for gap junction coupling: a mechanism for allowing neural networks to change states. *Society for Neuroscience*, Chicago, IL (Poster)
- S. Nirenberg, **C. Pandarinath**, I. Bomash, J.D. Victor, W.W. Tschetter (2009). How neural systems adjust to different environments: an intriguing role for gap junction coupling. *Computational and Systems Neuroscience*, Salt Lake City, UT (Selected talk)
- **C. Pandarinath**, K. Dedek, N.M. Alam, K. Wellershaus, T. Schubert, K. Willecke, G.T. Prusky, R. Weiler, S. Nirenberg (2007). Ganglion cell adaptability: Does the

coupling of horizontal cells play a role?" *Society for Neuroscience*, San Diego, CA (Poster)

Research Experience

- Research Assistant, **Nirenberg Lab**, Dept. of Physiology and Biophysics, Weill Cornell Medical College (2005-present). PI: Sheila Nirenberg
Investigating the mechanisms that underlie flexibility in information processing in neural circuitry. Focusing on the mouse retina, using electrophysiology, genetic techniques, mathematical modeling, and behavioral assays.
- Undergraduate Researcher, **Surface Sciences Lab**, Dept. of Physics, NCSU (2002-2003), PI: Robert Nemanich
Characterized "quantum dot" information storage devices using conductive-tip Atomic Force Microscopy.
- Undergraduate Researcher, **Nanoelectronics Lab**, Dept. of Electrical and Computer Engineering, NCSU (2001), PI: Veena Misra
Designed and constructed small signal electronic amplifiers for characterization of novel charge-storing organic compounds.

Skills

- Programming: C/C++, MATLAB, Python, Perl, Atmel microcontrollers, ARM/DSP embedded platforms, Real-time Linux, PHP, Java, HTML/Javascript
- Quantitative analysis: Neural response analysis, linear/non-linear modeling, digital filtering/signal processing, Bayesian/Maximum-likelihood decoding/stimulus reconstruction, statistical analyses
- Research techniques: Extracellular electrophysiology, optomotor response measurement, mouse survival surgery, breeding, genotyping

Teaching Experience

- Head Teaching Assistant, *Designing with Microcontrollers*, Cornell (2005)
- Teaching Assistant, *Introduction to Microelectronics*, Cornell (2003-2004)
- Teaching Assistant, *Introduction to Circuits*, Cornell (2003-2004)
- Teaching Assistant, *Introduction to Computing*, NCSU (2001)

Honors/Awards

- Fellow, Tri-Institutional Program in Vision Research (2005-2009)
- Honorable Mention, NSF Graduate Research Fellowship (2003)
- Benjamin Franklin Scholar, NCSU (2002)
- Leaders in Networking Scholarship, AT&T (2001)
- Philip B. Jackson Engineering Scholarship, NCSU (2001)
- Gregory Poole Engineering Scholarship, NCSU (2000)
- Dean's List, NCSU (1998-2002)

Work Experience

- **Intel Corporation**, *Hardware Validation*, Chandler, AZ (May-August 2002)
Designed and implemented test algorithms for an integrated wireless system-on-a-chip (Bulverde). Tested the chip at the FPGA and post-fabrication stages.
- **Billions of Operations per Second**, *Compiler Design*, Chapel Hill, NC (May–August 2000)
Wrote algorithms to extract instruction level parallelism from compiled programs, for high-speed DSP chips that used a Very Long Instruction Word (VLIW) architecture.

- **IBM Corporation**, *Mainframe Division*, Raleigh, NC (May-August 1999)
Ported low-level Linux functionality onto the System/390 (mainframe) architecture.

Citizenship: U.S. Citizen

References

Sheila Nirenberg

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