Curriculum Vita

Wayne O. Cochran
Assistant Professor, Computer Science
Washington State University Vancouver
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Current Appointment

Assistant Professor in the the School of Electrical Engineering and Computer Science at Washington State University Vancouver. Appointment began in August, 1999, as tenure track faculty.

Research Interest

Computer Graphics, Geometric Modeling, and Real Time Shading. Current work involves modeling and rendering intricate surfaces using fractal interpolation surfaces, and real-time illumination using texture maps.

Education

- **Ph.D.** Computer Science, 1998, Washington State University.
  Dissertation Title: "A Recurrent Modeling Toolset."
- **M.S.** Computer Science, 1994, Washington State University.
  Thesis title: "Fractal Volume Compression."
- **B.S.** Mathematics, cum laude, 1990. University of Washington.

Professional Experience

- **Assistant Professor**, 1999-present, Washington State University Vancouver. Current research area involves intricate surface modeling using recurrent models, and real-time illumination of relief surfaces using texture maps. Courses taught at WSUV: *Automata and Formal Languages, Operating Systems and Computer Architecture, Introduction to Computer Graphics, Advanced Computer Graphics* and *Programming Language Design.* Heavily involved in program development for computer science program which started in the fall of 1999.
- **Instructor**, 1998-1999, Washington State University. Performed research and taught courses in Introduction to Microprocessors, C Programming, Windows Programming, Computer Networks, and Java Programming.

- **Research Assistant**, 1994-1998, Washington State University. Research included volumetric compression using fractals, and other techniques using fractals to model complex geometry (e.g. rough curves and surfaces). Research was part of the *Recurrent Modeling Project* funded by Intel and a grant from the NSF. Also acted as substitute teacher for Computer Graphics, Advanced Computer Graphics, and Numerical Computing.
- **Research/Teaching Assistant**, 1992–1994, Washington State University. Contributed research for and implementation of knowledge based systems. Lab instructor for introductory computer programming courses.
- **Software Engineer**, 1990-1992, Raster Graphics Inc (assets acquired by Peritek Corporation in 2001) `http://www.rastergraf.com` 1804-P SE First St. Redmond, Oregon 97756 (541) 923-5530 Job Overview: Design and implementation of rasterization firmware for industrial graphics boards. Design and implementation of 3D rendering libraries.

Publications

1. Wayne O. Cochran, Recurrent Interpolation Surfaces, *Proceedings of the Western Computer Graphics Symposium,* March 2003, pp. 9–15.

2. W. O. Cochran, R. R. Lewis, J. C. Hart, The Normal of a Fractal Surface, *The Visual Computer,* vol. 17, no. 4, April 2001, pp. 209–218.

3. Wayne O. Cochran, Fractal Interpolation Surfaces for Digital Elevation Maps, *Proceedings of the Western Computer Graphics Symposium,* March 2001, pp. 8–14.

4. Wayne O. Cochran, A Recurrent Modeling Toolset, Ph.D. dissertation. Washington State University, December 1998.

5. Wayne O. Cochran, John C. Hart, Patrick J. Flynn, On Approximating Rough Curves with Fractal Functions, *Proceedings of Graphics Interface,* June 1998.

6. J.C. Hart, P.J. Flynn, W.O. Cochran. Similarity Hashing: A Model-Based Vision Solution to the Inverse Problem of Recurrent Iterated Function Systems. *Fractals 5* April 1997, pp. 39-50.

7. Wayne O. Cochran, John C. Hart, Patrick J. Flynn, Hashing Fractal Functions *Proceedings of the Western Computer Graphics Symposium,* April 1997, pp. 69–78.

8. Wayne O. Cochran, John C. Hart, Patrick J. Flynn, Fractal Volume Compression, *IEEE Transactions on Visualization and Computer Graphics* 2 (4), December 1996, pp. 313–322.

9. Wayne O. Cochran, John C. Hart, Patrick J. Flynn, Similarity and Affinity Hashing, *Proceedings of the Western Computer Graphics Symposium,* March 1996, pp. 89–100.

10. W.O. Cochran, J.C. Hart and P.J. Flynn. Recurrent Modeling. *Intel Forum: Enabling Live Media in Cyberspace,* invited poster. January 1996.

11. Wayne O. Cochran, John C. Hart, Patrick J. Flynn, Principal Component Classification for Fractal Volume Compression, *Proceedings of the Western Computer Graphics Symposium,* March 1995, pp. 9–18.

Courses Taught

1. Fall 2003, CptS 442/542, Computer Graphics, 3 credits, 40 students.
2. Fall 2003, CptS 317, Automata and Formal Languages, 3 credits, 20 students.
3. Spring 2003, CptS 355, Programming Language Design, 3 credits, 26 students
4. Spring 2003, CptS 548, Advanced Computer Graphics, 3 credits, 2 students
5. Fall 2002, CptS 442/542, Computer Graphics, 3 credits, 12 students.
6. Fall 2002, CptS 317, Automata and Formal Languages, 3 credits, 26 students
7. Spring 2002, CptS 355, Programming Language Design, 3 credits, 13 students
8. Fall 2001, CptS 442/542, Computer Graphics, 3 credits, 40 students.
9. Spring 2001, CptS 460, Operating Systems, 3 credits, 10 students.
10. Fall 2000, CptS 317, Automata and Formal Languages, 3 credits, 10 students.
11. Fall 2000, CptS 499, Special Problems, 2 credits, 5 students.
12. Spring 2000, CptS 460, Operating Systems, 3 credits, 12 students.
13. Spring 2000, CptS 499, Special Problems, 2 credits, 5 students.
14. Fall 1999, CptS 317, Automata and Formal Languages, 3 credits, 12 students.
15. Spring 1999, CptS 455, Computer Networks, 3 credits, 80 students.
16. Spring 1999, CptS 253, Java Programming Language, 3 credits, 50 students.
17. Fall 1998, EE 305, Introduction to Microprocessors, 2 credits, 20 students.
18. Fall 1998, CptS 251, C Programming Language, 2 credits, 80 students.
19. Fall 1998, CptS 252, Introduction to Windows Development Programming, 3 credits, 10 students.

Software Disseminated

1. Libraries for reading and viewing digital elevation maps.
2. 2D image and 3D volumetric compression software using DCT and fractal techniques.

Committees

- January 2000 – present. Faculty Governance Committee.
  Provides a formal, recognized structure through which faculty can have direct input in administrative decision making.

Consulting

- Smith-Root Inc,. 14014 NE Salmon Creek Avenue, Vancouver, WA 98686.
  Helped design and port control software for an electronic fish barrier. The system is now web based, and uses a client/server protocol for remote control.

Reviewer

- Information Processing Letters
- ACM Transactions on Graphics
- Graphics Interface
- IEEE Visualization
- Shape Modeling International
- 2003 International Conference on Cyberworlds, December 3-5, 2003, Singapore.

Awards

- Curtis Fellowship, 1994, Washington State University.
- Phi Beta Kappa, 1990, Alpha Chapter, University of Washington.
- Deans List, 1990, University of Washington.
- Golden Key National Honor Society, 1990, University of Washington.

Professional Service

WSU Linux Users Group, co-founder:

- Faculty Advisor (1998–1999)
- President (1997–1998)
- Treasurer (1994–1997),

1995 *SIGGRAPH* student volunteer.

References

Charles R. Lang, Associate Professor, School of Electrical Engineering and Computer Science, Washington State University Vancouver, 14204 NE Salmon Creek Avenue, Vancouver, Washington 98686-9600, (360) 546-9632.

John C. Hart, Associate Professor, Dept. of Computer Science, University of Illinois, 3212 Digital Computer Lab. 1304 Springfield Avenue, Urbana, Illinois 61801 (217) 333-8740.

Patrick J. Flynn, Associate Professor, Department of Computer Science and Engineering, University of Notre Dame, 384 Fitzpatrick Hall of Engineering, Notre Dame, Indiana 46556, (219) 631-8803.