Keith Grochow

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Background and Objectives

I recently received my Ph.D. in Computer Science & Engineering from the University of Washington, where my research concerned a production-quality interactive visualization system for oceanographic data. I returned to postgraduate study after 16 years in the software industry including 10 with Microsoft Corporation. I seek a position that builds on my work in both of these environments to create world-class user-centric systems that take advantage of cutting edge research as well as forward looking user interaction models.

Key Areas of Expertise

Management of product design and development teams

User Interface design and specification

Practical application of research and analysis

Proficient in c, c++, c#, and graphics APIs (OpenGL, DirectX)

Working knowledge of python, matlab, web and GPU programming

Education

Doctor of Philosophy in Computer Science, June 2011 – University of Washington

Master of Science in Computer Science, March 2004 – University of Washington

Bachelor of Science, Computer Science, June 1990 - University of Washington (89-90)

US Naval Academy (82-84)

Experience

University of Washington, Seattle

Research Assistant **2002–2010**

Designed, implemented and maintained two large c++ code bases:

- 30,000+ line system supporting visualization of ocean science data
- 10,000+ line system for AI enhanced motion capture based character animation

Reviewed relevant literature and proposed new areas of research.

Published articles and presented results at professional conferences.

Liaised with outside partners – Microsoft Research, Electronic Arts, UW Ocean Sciences.

QPass Corporation, Seattle

Director of Product Management **2000–2001**

Managed product management department – 5 leads, total staff of 12.

Responsible for product strategy and yearly product budget of $8M.

Researched technology for wireless delivery of content and billing service. This research became the basis of a strategic shift by the company to a cellular focus.

Member of executive management team, contributed to all major corporate decisions.

KG Consulting Services, Seattle

Principal **1998–2000**

Responsible for 3D software design and development for a golf simulator startup venture funded by Callaway Golf.

Technical advisor in corporate acquisition of Access Software by Microsoft Gaming Division.

Microsoft Corporation, Redmond

Group Program Manager – Games Division **1994–1998**

Managed team of 5 leads responsible for line of sports games and online sports projects. Group released 8 products over 3 ½ years with yearly development budget of $5M.

Responsible for group technology assessment and development strategy – primary areas were motion capture, graphics engines, physics simulators, and content creation tools.

Co-responsibility for group product strategy, budgets and schedules.

Negotiated and managed contracts with third party development groups.

Program Manager – Work Group Products **1992–1994**

Managed release of 1994 version of Microsoft Office for the Macintosh.

Researched and designed work group features in Microsoft Office for Windows 95.

Responsible for the programming interface for pre-release versions of Microsoft Exchange, which included management of the schedule, specification, and technical outreach.

Lead role in international standards committee to release the Common Messaging API.

Program Manager – Multimedia Systems **1990–1992**

Program manager for Microsoft Video 1.0 – which included interface design and coordination of development, testing, documentation, and third party development.

Investigation and analysis of existing video compression technologies and research - presented comprehensive report to executive management for strategic planning.

The final product defined the AVI standard on Windows and provided tools, drivers, and interoperability support for video capture, creation, and playback.

Designed, managed, and shipped animation support, the media device language (MCI), and the device driver kit for Multimedia Windows 1.0 (Windows 3.1).

Software Design Engineer in Test – Microsoft Word **1988–1990**

Developed test suites and applications for automated testing of Windows Word 1.0.

Designed and developed system level test tools for MSMail 1.0.

H&S Corporation, Redmond

Software Design Engineer – Microsoft Project **1985–1988**

Lead developer for Microsoft Project 4.0 for MS-DOS. Managed development team and coordinated with Microsoft on product design and testing.

Application won Project Management Software of the Year 1988, Computer World.

Research

Primary Research Areas

- Scientific interactive visualization systems and interfaces for earth sciences.
- AI enhanced motion capture based character animation.

Publications

K. Grochow, M. Stoermer, J. Fogarty, C. Lee, B. Howe, and E. Lazowska. *COVE: A Visual Environment for Multidisciplinary Ocean Science Collaboration*. Proceedings of the IEEE Conference on eScience, 2010.

K. Grochow, B. Howe, E. Lazowska, R. Barga, and M. Stoermer. *Client + Cloud: Evaluating Seamless Architectures for Visual Data Analytics in the Ocean Sciences*. Proceedings of the Conference on Scientific and Statistical Database Management, 2010.

K. Grochow, M. Stoermer, D. Kelley, J. Delaney, and E. Lazowska. *A Visual Environment for Ocean Observatory Design*. Journal of Physics: Conference Series volume 125, 2008.

R. Barga, J. Jackson, N. Araujo, D. Guo, N. Gautam, K. Grochow, and E. Lazowska. *Trident: Scientific Workflow Workbench for Oceanography*. Proceedings of the Second IEEE International Workshop on Scientific Workflows, 2008.

A. P. Shon, K. Grochow, A. Hertzmann, and R. P. N. Rao. *Learning Shared Latent Structure for Image Synthesis and Robotic Imitation*. Proceedings of Neural Information Processing Systems, MIT Press, 2006.

W. M. Brown, L. Cronk, K. Grochow, A. Jacobson, C. K. Liu, Z. Popovic, and R. Trivers. *Dance Reveals Symmetry Especially in Young Men*. Nature Dec. 2005.

A. P. Shon, K. Grochow, and R. P. N. Rao. *Robotic Imitation from Human Motion Capture Using Gaussian Processes*. Proceedings of the IEEE/RAS International Conference on Humanoid Robots, 2005

K. Grochow, S. L. Martin, A. Hertzmann, and Z. Popovic. *Style-based Inverse Kinematics*. Proceedings of ACM SIGGRAPH, 2004.

Select Presentations and Grants

Presented conference paper, IEEE eScience Conference, 2010.

Presented conference paper, SSDBM Conference, 2010.

Presented poster and workshop paper, ACM GROUP Conference, 2009.

Presented poster, SCIDAC Conference, 2008.

Awarded Microsoft Corporation scientific visualization research grant, 2007-2009.

Presented conference paper, ACM SIGGRAPH Conference, 2004.

References

Dr. Ed Lazowska

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