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Education

- **Doctor of Philosophy**, Computer Science, **Virginia Tech** - Blacksburg, VA Dec 2007
Advisor: Dr. Rex Hartson
Dissertation: Connecting the usability and software engineering life cycles through a communication-fostering software development framework and cross-pollinated computer science courses.
- **Graduate Certificate**, Human-Computer Interaction, **Virginia Tech** - Blacksburg, VA Dec 2006
- **Master of Science**, Computer Science, **Virginia Tech** - Blacksburg, VA May 2006
- **Master of Science**, Computer Engineering, **Virginia Tech** - Blacksburg, VA May 2002
- **Bachelor of Technology**, Electronics & Communication Engg., **Nagarjuna University**, India May 1999

Areas of Interest, Specialization, and Competence

Human-computer interaction (HCI), multi-platform user interfaces, sustainability of electronic systems through design, computer science education, usability engineering, software engineering, and connecting usability and software engineering life cycles

Professional Awards and Honors

- **Outstanding Graduate Teaching Award**, Department of Computer Science, Virginia Tech, 2008
- Recipient of **Computing Research Association (CRA) Scholarship** for CRA Academic Careers Workshop, 2008
- **Invited Student Commencement Speaker**, Graduate Commencement Ceremony, Virginia Tech, 2007
- **Outstanding Doctoral Student**, College of Engineering, Virginia Tech, 2007
- **Citizen Scholar Award**, for scholarship in service to the community, Graduate School, Virginia Tech, 2007
- Recipient of **Women and Minority Artists and Scholars Lecture Series (WMASLS) Grant**, Office of the Provost, Virginia Tech, 2007
- Recipient of **Graduate Research Development Project Award**, Graduate Student Assembly, Virginia Tech, Fall 2006
- **First Place in Engineering**, Interactive demo and poster presentation, *Embodied data objects: Tangible Interfaces to Information Appliances*, 22nd Annual Research Symposium and Exposition, Graduate School, Virginia Tech, 2006
- **Featured Graduate Student of the Month**, Graduate School, Virginia Tech, March 2005
- **Dean's List for Outstanding Instructors/Teaching Excellence**, College of Engineering, Virginia Tech, Summer 2004
- **Alpha Epsilon Lambda (AEL)**, Academic Excellence and Leadership Honor Society for Graduate and Professional Students
- **Upsilon Pi Epsilon (UPE)**, National Computer Science Honor Society

Publications

Refereed journal articles

- Howarth, J., Pyla, P.S., Yost, B., Haciahmetoglu, Y., Young, D., Ball, R., Lambros, S. and Layne, P., Designing a Conference for Women Entering Academe in the Sciences And Engineering. *Advancing Women in Leadership (AWL) Journal*, 30 pages, 2007.

Refereed book chapters

- Pyla, P.S., Pérez-Quiñones, M.A., Arthur, J.D. and Hartson, H.R., Ripple: An Event-Driven Design Representation Framework for Integrating Usability and Software Engineering Life Cycles. In Seffah, A., Gulliksen, J. and Desmarais, M. eds. *Human-centered Software Engineering: Integrating Usability in the Software Development Lifecycle*, Springer, 245-265, 2005.

Refereed conference publications

- Pyla, P.S., Tungare, M., Pérez-Quiñones, M.A., and Holman, J. Continuous User Interfaces for Seamless Task Migration, (to appear in) *HCI International*, 2009.
- Pyla, P.S., Hartson, H.R., Arthur, J.D., Smith-Jackson, T.L., Pérez-Quiñones, M.A., and Hix, D. “How do I evaluate ‘THAT?’” Experiences from a systems-level evaluation effort, (to appear in) *HCI International*, 2009.
- Pérez-Quiñones, M.A., Tungare, M., Pyla, P.S. and Harrison, S., Personal Information Ecosystems: Design Concerns for Net-Enabled Devices. *Proc. of 6th Latin American Web Conference (LA-Web)*, 2008.
- Tungare, M., Pyla, P.S., Sampat, M., Pérez-Quiñones, M.A., Syncables: A Framework to Support Seamless Data Migration across Multiple Platforms. *Proc. of the IEEE International Conference on Portable Information Devices (IEEE Portables)*, 1-5, 2007.
- Pyla, P.S., Howarth, J.R., Catanzaro, C. and North, C., Vizability: A Tool for Usability Engineering Process Improvement through the Visualization of Usability Problem Data. *Proc. of the 44th ACM Southeast Conference (ACMSE)*, 620-625, 2006.
- Tungare, M., Pyla, P.S., Glina, V., Bafna, P., Zheng, W., Yu, X., Balli, U., and Harrison, S., Embodied Data Objects: Tangible Interfaces to Information Appliances. *Proc. of the 44th ACM Southeast Conference (ACMSE)*, 359-364, 2006.
- Pyla, P.S., Pérez-Quiñones, M.A., Arthur, J.D. and Hartson, H.R., What We Should Teach, but don’t: Proposal for a Cross Pollinated HCI-SE Curriculum. *Proc. of the Frontiers in Education (FIE) Conference*, S1H17-22, 2004.
- Chen, J., Pyla, P.S. and Bowman, D.A., Testbed Evaluation of Navigation and Text Display Techniques in an Information-Rich Virtual Environment. *Proc. of the IEEE Virtual Reality*, 181-188, 2004.
- Bowman, D.A., North, C., Chen, J., Polys, N.F., Pyla, P.S., and Yilmaz, U., Information-Rich Virtual Environment: Theory, Tools, and Research Agenda. *Proc. of the ACM Virtual Reality Software and Technology (VRST)*, 81-90, 2003.

Refereed extended abstracts and workshop publications

- Judge, T. K., Pyla, P. S., McCrickard, D. S., and Harrison, S. Affinity Diagramming in Multiple Display Environments. *Proc. of the CSCW 2008 Workshop on Beyond the Laboratory: Supporting Authentic Collaboration with Multiple Displays*, 2008, 4 pages.
- Ball, R., Pyla, P.S. and Pérez-Quiñones, M.A. OSI and ET: Originating Source of Information and Evidence Traceability. *Extended Abstracts on Human Factors in Computing Systems (CHI '07)*, 2007, 2261-2266.

- Pyla, P.S., Hartson, H.R., Arthur, J.D., Smith-Jackson, T.L. and Pérez-Quiñones, M.A. Evaluating Ripple: Experiences from a Cross Pollinated SE-UE Study. *Proc. of the CHI 2007 Workshop on Increasing the Impact of Usability Work in Software Development*, 2007, 4 pages.
- Tungare, M., Pyla, P.S., Miten, S. and Pérez-Quiñones, M.A. Defragmenting Information with the Syncables Framework. *Proc. of the 2nd Invitational Workshop on Personal Information Management at SIGIR 2006*, 2006, 4 pages.
- Pyla, P.S., Tungare, M. and Pérez-Quiñones, M.A., Multiple User Interfaces: Why Consistency is Not Everything, and Seamless Task Migration is Key. *Proc. of the CHI 06 Workshop on The Many Faces of Consistency in Cross-Platform Design*, 2006, 55-60.
- Pyla, P.S., Pérez-Quiñones, M.A., Arthur, J.D. and Hartson, H.R., Towards a Model-Based Framework for Integrating Usability and Software Engineering Life Cycles. *Proc. of the Interact 2003 Workshop on "Closing the Gaps: Software Engineering and Human Computer Interaction"*, 2003, Université catholique de Louvain, Institut d'Administration et de Gestion (IAG) on behalf of the International Federation for Information Processing (IFIP), 67-74.

Invited papers and presentations

- Pyla, P.S., Communication and Development Styles for Interactive Software: Experiences from a Cross-Pollinated SE-UE Course. Invited talk at *NSF Chautauqua on Teaching Communication Skills in the Software Engineering Curriculum: A Forum for Professionals and Educators*, June 9-11, 2008.
- Pyla, P.S., Connecting the Software Engineering and Usability Engineering Life Cycles. *Villanova University Colloquia Lecture Series*, March 31, 2008.
- Pyla, P.S., Tungare, M., Holman, J. and Pérez-Quiñones, M.A., Continuous UIs for Seamless Task Migration in MPUIs: Bridging Task-Disconnects. Presented at the *Human-Computer Interaction Consortium 2007*, February, 2007.
- Pyla, P.S., Connecting the Usability and Software Engineering Life Cycles Through a Communication-Fostering Software Development Framework and Cross-Pollinated Computer Science Courses. Invited talk at the *Center for Human-Computer Interaction Seminar Series*, Virginia Tech, September 2006.

Manuscripts in preparation, in consultation with editors and publishers, or under review

- Hartson, H. R. and Pyla, P. S. *Engineering the User Experience: Product, Process, and Beyond* (A comprehensive textbook on usability engineering process, user interface design framework that embodies design guidelines called User Action Framework, usability evaluation methodologies, connections between software engineering and usability engineering, and emerging topics such as sustainability through HCI). Expected to be published August 2009.
- Pérez-Quiñones, M.A., Pyla, P. S., and Tungare, M. *User Interface Software: Principles and Technologies*. Chapman & Hall. Expected to be published late 2009.
- Pyla, P.S., Hartson, H.R., Arthur, J.D., Smith-Jackson, T.L., Pérez-Quiñones, M.A., and Hix, D. Modeling the Software and Usability Engineering Life Cycles to Create an Integrated Development Environment. Special Issue of *ACM Transactions on Computer-Human Interaction (ACM TOCHI): User Interface description Languages for Next Generation User Interfaces*.
- Pyla, P.S., Hartson, H.R., Arthur, J.D., Smith-Jackson, T.L., Pérez-Quiñones, M.A., and Hix, D. Connecting the Usability and Software Engineering Life Cycles Through a Cross-Pollinated Computer Science Course. *Computer Science Education Journal*.

- Pyla, P.S., Hartson, H.R., Arthur, J.D., Smith-Jackson, T.L., Pérez-Quiñones, M.A., and Hix, D. Connecting the Usability and Software Engineering Life Cycles: Tradeoffs With Team Compositions and Communication Models. *AIS Transactions on Human-Computer Interaction*.
- Judge, T. K., Pyla, P. S., McCrickard, D. S., and Harrison, S. Studying Group Decision Making in Affinity Diagramming.

Professional and Academic Experience

Postdoctoral Associate, Department of Computer Science, Virginia Tech (Dec 2007 to present)

- Managing the Usability Methodologies & Tools group
- Teaching graduate and undergraduate computer science courses

Usability Consultant, Network Infrastructure and Services, Virginia Tech (Aug 2008 to present)

- Performing usability walkthroughs for VT Emergency Notification System (a campus-wide emergency alerts management system)
- Identifying usability problems and providing redesign solutions

Usability Consultant, Meridium Inc. (an independent company), Roanoke, Virginia (Summer/Winter 2006)

- Performed usability walkthroughs for Meridium's suite of software systems
- Identified usability problems and provided redesign solutions
- Introduced usability best practices and guidelines into their development life cycle

Graduate Research Assistant, Department of Computer Science, Virginia Tech (Summer 2005)

- Research and design team for DCART (Usability Data Collection, Analysis, and Reporting Tool) project
- Designed tools to support usability engineering life cycle activities and products
- Created a conceptual metaphor that uses multi-view visualization to make DCART system model intuitive
- Developed low-fidelity paper prototypes and conducted lab-based usability evaluations

Graduate Research Assistant, Department of Chemistry, Virginia Tech (June 2001 – May 2002)

- Developed web-based and standalone applications in Java for data mining, analyzing, and recording patterns in sets of torsion angles of protein structures
- Gathered and analyzed requirements, designed, implemented, and deployed the applications designed for chemistry researchers

Teaching Experience

Instructor, Department of Computer Science, Virginia Tech

- **Software Engineering** – graduate-level course (Fall 2008)
- **Introduction to Problem Solving in Computer Science** – undergraduate-level course (Fall 2008, Spring 09)
- **Usability Engineering** – graduate-level course (Spring 2008)
- **Human-Computer Interaction** – junior/senior-level undergraduate course (Summer 2004/2005, Spring 09)

Graduate Teaching Assistant, Department of Computer Science, Virginia Tech

Assisted in teaching, grading assignments and tests, conducted in-class activities, and sometimes lectured:

- **Usability engineering** – Graduate course (Spring 2003/2004, Fall 2004/2006)
- **Human-computer interaction** – Junior/senior course (Summer 2003, Fall 2003/2005, Spring 2006)
- **Graphical user interfaces** – Special study senior-level course (Spring 2005)
- **User interface software** – Special study graduate course (Fall 2002)

Selected Research Threads

Supporting group decision making in affinity diagramming activities using software tools: Currently part of a team researching the core phenomena that influence consensus building and collaborative work

- Conducted four observational studies of participants creating affinity diagrams
- Identified three candidate ideas for tools supporting group decision making: shared awareness, cognitive offloading, and understanding, organizing and searching

Continuous User Interfaces (CUIs) for multi-platform user interaction: Currently part of three-member research team addressing the problem of task-disconnect that users face when migrating a task from one platform to another

- Defined task-disconnects (break in continuity that occurs when a user attempts to accomplish a task using more than one computing device) and introduced the concept of CUIs
- Developed a software framework to bridge this task-disconnect, enabling users to seamlessly transition their tasks among different devices

Embodied data objects for tangible interfaces to information appliances: Researched alternative and novel interaction paradigms to mitigate the increasing complexity of computing devices and platforms

- Applied the notion of using tangible everyday objects as embodied representations of active digital media
- Prototyped two service-oriented information appliances (printer and presentation projector) which provide specific “computing” services as dictated by context of interaction
- Designed a framework to support more types of services with little changes to existing setup

Visualization of usability data/metrics for usability process improvement: Started and led a research group that designed and developed Visability, a tool for visualizing usability problem data

- Tool provided problem trends, what-if analysis capability, aggregate analysis, and ability to view recurring issues within usability engineering life cycle
- Advised and mentored a graduate student who extended this project as his master’s thesis

Conference design for NSF’s AdvanceVT project: Was part of six-member research group to design a conference for women entering academe in the sciences and engineering

- Conducted extensive literature review on learning theories, human cognition, gender bias, etc.
- Conducted interviews and focus groups with women and faculty members in academe to determine problems and potential solutions for increasing female representation in sciences and engineering
- Introduced the idea of a “Social Affordance” and created four design heuristics grounded in human information processing theory for use by future conference designers

Professional and University Service

- **Invited Speaker at the Graduate Recruitment Weekend Conclusion Dinner**, College of Engineering, Virginia Tech, 2008
- **Invited Panelist**, Workshop on Undergraduate Research in Computing: Building Diversity in the Computer Science Research Pipeline, in the Richard Tapia: Celebration of Diversity in Computing Conference, 2007
- **Organizer**, Workshop on Undergraduate Research Experiences, in the Richard Tapia: Celebration of Diversity in Computing Conference, 2007
- **Scholars of the Future Program Coordinator**, Department of Computer Science, Virginia Tech, 2007 – Recruited and mentored 12 undergraduate students in Computer Science to encourage the pursuit of graduate studies.
- **Research Experience for Undergraduates Program Coordinator**, Center for Human-Computer Interaction, Virginia Tech, 2006-2007 – Organized an eight-week NSF-funded program; recruited and mentored 24 undergraduate students from over a dozen universities in various aspects of HCI research, and led discussions and sometimes lectured on a variety of topics in HCI.
- Member, **Graduate Student of the Year Selection Committee**, Graduate School, Virginia Tech, 2007
- **Graduate Student Representative to the Faculty**, Department of Computer Science, Virginia Tech, 2004
- **Secretary of the Interior** (managing graduate student logistical resources), Graduate Council, Department of Computer Science, Virginia Tech, 2004/2005
- **Computer Science Graduate Representative to the Graduate Student Assembly**, Virginia Tech, 2004-2007
- **Graduate Council Mentor** to new graduate students, Department of Computer Science, Virginia Tech, 2004
- **Technical Reviewer** for Conference on Human Factors in Computing Systems (CHI 2007, 2008, 2009), Interact (2007), Frontiers in Education (FIE 2006, 2007, 2009), Software Quality Journal (2006), 2nd Latin American Conference on Human-Computer Interaction (2005), Richard Tapia: Celebration of Diversity in Computing Conference (2009).

Extracurricular Activities and Awards

- **Best In Show and Crowd Favorite**, Creative Design Contest, Graduate School, Virginia Tech, 2007
- **First Place, Photography Category**, Graduate Life Center Art and Photography Contest, Graduate School, Virginia Tech, Fall 2007
- **First Place, Photography Category**, Graduate Life Center Art and Photography Contest, Graduate School, Virginia Tech, Fall 2006

Professional Memberships

- **ACM Special Interest Group on Computer-Human Interaction (ACM SIGCHI)**
- **Usability Professionals' Association**
- **Green Technology Entrepreneurship Academy**, UC Davis Center for Entrepreneurship

References

Available on request.