Francesca A. Barrientos

Summary

More than ten years software and three years mechanical engineering experience. Knowledge of and experience in various fields ranging from cognitive psychology to musical theater. Experience leading and participating in creative teams. Facility in bridging cultures.

Education

University of California, Berkeley, California. Ph.D. Computer Science, *May 2002*. Minors in cognitive science and computer systems. Thesis: *Controlling Expressive Avatar Gesture*.

Cornell University, Ithaca, New York. B.S. Mechanical Engineering, *1987*.

Academic Research

THESIS Developed novel interaction technique for controlling expressive avatar gestures using pen gesture input. Presented project proposal and won approval. Developed architecture for plugin to attach software behaviors to avatars in VRML based virtual worlds. Prototyped system in Java and VRML. **COLLABORATIVE** Analyzed problem of nonverbal communication in virtual worlds. Designed and built user **ENVIRONMENTS** controls for simple avatars. Designed experiment to determine effect of avatar kinematic design on expressiveness given two nonverbal communication tasks. Carried out experiments with twelve users. Analyzed results and discovered potential design improvements. BEHAVIORAL Built airship flight simulator extension to dynamics simulator. Designed architecture for run-ANIMATION time loaded object behaviors. Showcased work at advanced research exhibition. COMPUTER Designed and implemented computer vision scheme for classifying hand postures. VISION

Professional Experience

SOFTWARE ICEM CFD Engineering, Product Development ENGINEERING Consultant - Software Engineering Berkeley, California Designed and implemented features for user interface for FEA mesh generation software. Implemented efficient collision detection algorithm to improve performance of interactive manipulation of three dimensional parts geometry. Ported entire suite of products from UNIX to WinNT platform. 1997-present Xerox Corporation, Expert Systems Group Consultant Henrietta, New York Advised three project leaders in porting real-time diagnostic system from LISP to C++. Taught Sep - Dec 1991 process for developing C++ code.

	Quantum Consulting, Software DevelopmentBerkeley, CaliforniaComputer ProgrammerBerkeley, CaliforniaImplemented user interfaces for energy usage forecasting software.1990-1991	
Research	Xerox PARC, System Sciences LabPalo Alto, CaliforniaResearch InternPalo Alto, CaliforniaDesigned features for intelligent augmentation of electronic handheld service manuals for customer service technicians. Observed technicians at customer sites.May - Aug 1991	
	<i>Research-Engineering Liaison</i> Investigated opportunities for scientists at research division to collaborate with engineers in manufacturing unit. Collected stories from fourteen product engineers. Uncovered thirty potential research projects. Submitted recommendations to research scientists. 1991-1992	
Mechanical Engineering	Xerox Corporation, Mechanical Technology DevelopmentProject EngineerRochester, New YorkInvestigated advanced copier finisher technology for neatly stacking paper. Optimized performance using Quality (Taguchi) experimental design techniques. Lead brainstorming and concept refinement team—resulted in five U.S. patents. Taught brainstorming and concept synthesis techniques to other engineers. Lead team in benchmarking competitive technologies. Through fixing copiers at customer sites, learned sympathy for customer service technicians and sales personnel.	
	Westinghouse Electric Corporation, Marine DivisionSafety Engineering AssistantSunnyvale, CaliforniaAssisted human factors engineer in program implementation, hardware design critique and mechanical system analysis. Interviewed fourteen design engineers to assess subsystem failure modes in capsule launching system.Jun - Aug 1986	
Other Accomplishments		
	H.C. Deterry F 120.047 Line 0, 1002 Laterry Charles Could a Decision	

PATENTS	U.S. Patent 5,120,047. June 9, 1992. Integral Sheet Stacking Buckle Suppressor and Registration Edge.U.S. Patent 5,120,046. June 9, 1992. Automatically Spaced Sheet Stacking Baffle.U.S. Patent 5,127,643. July 7, 1992. Automatic Copy Sheet Selection Device.
Volunteer Work	Assisted blind computer science graduate student with reading and library tasks; built houses with Habitat for Humanity; week long service in Appalachia among rural poor.
Favorite Roles	Jenny in Company; Maria in Twelfth Night; Mrs. Pearce in My Fair Lady.
INTERESTS	Figure drawing, singing, acting, literature, design, martial arts.