Design Portfolio
Alice M. Agogino

Concept Database

Engineering Pathway

MMCS WEB
MultiMedia Case Studies in Engineering Design

Spatial Reasoning

theDesignExchange

EP ON THE GO
My early work in the Concept Database using mass customization became the "patent buster" for data-base driven internet commerce as my prior work broke the existing patent in this area. So thank me and my students for why you don’t have to pay a license for selling something on the web that is configured through a database. The interface is a bit ugly though, using X-Windows as this pre-dated the WWW.
Publications


• Chidambaram, Bala and Alice M. Agogino, "Catalog-Based Customization", to *Proceedings of the 1999 ASME Design Automation Conference, 1999*
I co-developed spatial reasoning software using a natural environment for engineering graphics students to improve their spatial reasoning and 3D visualization skills.
Publications


• Blockstacking Courseware (with S. His and M.C. Linn), 1973.

• “Learning Style Based Innovations to Improve Retention of Female Engineering Students in the Synthesis Coalition” (with S. Hsi), Engineering Education for the 21st Century: Proceedings of Frontiers in Education, FIE’95, ASEE/IEEE, pp. 4a2.1-4a2.4, 1995. This paper describes the use of integrative multimedia courseware designed to scaffold student learning and accommodate learning style differences. Synthesis courseware aimed at improving the retention of under-represented engineers has been further designed to work effectively in a range of educational settings, including classroom, high-tech small study groups and self-paced individualized learning. As an example, this paper focuses on the Spatial Reasoning project aimed at improving the retention of female engineering students through scaffolding students in spatial reasoning.
Working with my graduate students, I developed multimedia cases of engineering design, including industrial design, design for assembly, design for manufacture, customer-driven design, design trade-offs, design for environment service & ergonomics, social implications of design, history of technology.

---

The IBM Proprinter

A Case Study in Engineering Design

© 1992 Engineering Systems Research Center
University of California at Berkeley

Cyclone Grinder

About This Case Study

This case study highlights the importance of good design practices and how they contribute to product success. The Cyclone Grinder's success in the market can be attributed to the significant changes Ingersoll-Rand (IR) made in their new product development process.

Quality plays a major role in this product development process. The key aspects to be addressed are:

- Customer Focus
- Industrial Design
- Ergonomic Design
- Compressed Development Cycle
- Multifunctional Teams
- Concurrent Engineering

---

The Mattel Color Spin

A Case Study in Design

© 1993, 1995 Engineering Systems Research Center
University of California at Berkeley
SYNTHESIS National Engineering Education Coalition:
Cal Poly San Luis Obispo, Cornell, Hampton, Iowa State, Southern, Stanford, Tuskegee, Univ. of California: Berkeley.
The multimedia cases were used for K-12 outreach, as well as introduction to engineering, freshman design and senior design classes.
The Virtual Disk Drive Design Studio is an educational game using interactive multimedia to introduce students to the world of mechatronics design. It won the Premier Award for Excellence in Engineering Courseware in 1997.
Publications


• Virtual Disk Drive Design Game with Links to Math, Physics and Dissection Activities,” (with Rebecca Richkus, David Yu, and David Tang), *Proceedings of FIE'99 1999*, pp. 12c3-18 to 12c3-22.
Welcome to the Engineering Pathway!

Engineering Pathway Resources - Catalog, Browse, Search, Results and Reviews
We are a digital library of high-quality teaching and learning resources for applied science and math, engineering, computer science/information technology and engineering technology for K-12, higher education and beyond. Our passion is engineering and our goal is to provide resources that will help parents, faculty and practicing engineers to inspire more of today’s students to follow an engineering path as their way to understand and improve our world. Engineering Pathway has it all – Blog, Today in History, News & Events, RSS feed and Twitter.

Dream Big, Love What You Do and Make a World of Difference – Become an Engineer
Engineering is about bringing ideas to action. Apply your ingenuity and collaborate with other people to imagine and create things that have never existed before. Life takes engineering!

EP on the GO Mobile Interaction
We are developing applications that enable users to navigate through and access location-based digital library resources with mobile browsers or augmented reality tools. We are also designing web-based tools for teachers and students to create, review, and explore collections of these resources. See the EP on the GO collection at www.engineeringpathway.org/collections/epgo/
Mobile Learning — Engineering Education Community

Learning that is enabled across locations and takes advantage of learning opportunities offered by portable technologies.

Mobile or M-Learning can be used in formal class or lab exercises or in informal or semi-structured settings. Today there are a wide range of portable devices, software and pedagogies for use in mobile learning.

Browse these resources:
- EP on the GO Collection
- Educator’s Guides
- Mobile Games
- Mobile Learning
- PDAs
- Pocket PC
- Podcasting
- Probeware

www.engineeringpathway.org
Mobile Learning with Augmented Reality

UC Botanical Garden at Berkeley

About:
The UC Botanical Garden is a non-profit research garden and museum for the University of California at Berkeley, having a notably diverse plant collection...

What and Where?
Place:
UC Botanical Garden

Location:
200 Central Avenue
Berkeley, California 94704-1900
United States

Related Collections:
UC Botanical Garden

The UC Botanical Garden is a non-profit research garden and museum for the University of California at Berkeley, having a notably diverse plant collection...
Publications


Help create the most extensive web resource for the design community.
> Get Started

welcome!
we hope you'll join us

Welcome to the DesignExchange, an interactive portal for the human-centered design community! Methods based on academic and industry publications will slowly be added by the students working on the site. Then, it will be opened up to new members, who will be able to add, edit, rate and comment on methods, new or old. Members will also be able to add case studies about their design research so we can all learn from each others' experiences!

featured method

featured case study
“The Design Exchange: Supporting the Design Community of Practice,” (with C. Roschuni and S. Beckman), Proceedings of ICED 2011 Proceedings of the 18th International Conference on Engineering Design (ICED11), Vol. 8, 2011, pp. 255-264. The study of design – and more specifically, the quality of the process of design – has been shown to have high impact and leverage on the quality and success of engineered products. As design research does not fall into any one disciplinary body of knowledge, there is a need to consolidate and organize the many design research methods used, develop a community of practitioners to evaluate and categorize those methods and educate the next generation of design innovators in appropriate methods. In this paper, we introduce a preliminary design for The DesignExchange, an interactive web portal to meet these needs.