

Alexander Hussain

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Professional Summary

Mechanical Engineer with a passion for researching and designing products that will help to improve the lives of others. Strong leader and project manager with creative problem solving and clear communication skills. Extensive knowledge of user-centered design, the product development process, industrial design, usability, ergonomics, CAD, rapid prototyping and innovative user research techniques. Experienced working with multidisciplinary teams in a fast-paced consulting environment. Recognized for patentable and award-winning design and engineering work.

Experience

- ION Design** || Edgewater, NJ || *Product Design Engineer* 10.10 – Present
- Responsible for engineering analyses (back of the envelope, MathCAD, FEA) & experimental iteration
 - Developed CAD using surfacing & master model techniques in Solidworks & Pro/E for multiple consumer & medical products
 - Sourced, coordinated & managed external vendors in the development of beauty models & functional prototypes
 - Assisted company leaders with business development tools including social networking strategy & photography
 - In-house expert on usability, human factors and ergonomics; responsible for quoting all related work and executing project tasks
- HumanCentric** || Cary, NC || *Design Engineer* 6.06 – 10.10
- Only engineer on the product design team; responsible for all mechanical component design, technical analyses & calculations, CAD modeling, finite element analysis, photorealistic rendering, rapid prototyping, technical documentation, and manufacturing support
 - Established first equity-based partnership at HumanCentric; led a multidisciplinary team in the development of home medical devices
 - Served as team leader for two award winning product design contest submissions
 - Designed and authored user interface (UI) specifications and style guides for various products
 - Developed & executed design research protocols; moderated usability studies, interviews, and focus groups; managed participant recruiting; conducted in-field ethnographic and observational research; created user personas and storyboards
 - Conducted ergonomic analyses and heuristic evaluations of new and existing product designs
 - Acted as staff photographer; captured digital photos for company headshots, website, events and projects.
 - Led a team responsible for re-structuring the company-wide business development process in early 2009
- TDC Medical** || Marlborough, MA || *Mechanical Engineer, Co-op* 06.05 – 12.05
- Worked with clients, senior engineers, and VP of product development to brainstorm and create product concepts and specifications
 - Responsible for all human factors and ergonomic analyses
 - Sketched, designed and fabricated engineering test fixtures and mechanical components to be utilized in medical devices
- Design Continuum** || West Newton, MA || *Mechanical Engineer, Co-op* 06.04 – 12.04
- Worked alongside clients in small multidisciplinary teams to brainstorm, develop and troubleshoot various products
 - Responsible for designing and testing mechanical components; created prototypes/functional models using CAD & machine shop tools
 - Authored engineering test reports and assembly/troubleshooting manuals for multiple projects
- Instrumentation Laboratory** || Lexington, MA || *Systems R&D Mechanical Engineer, Co-op* 06.03 – 12.03
- Developed experimental protocols; designed, fabricated & conducted accelerated life tests; resolved engineering change orders
- Becton Dickinson** || Boston, MA || *Product Development Engineer, Co-op* 01.03 – 3.03
- Created & conducted experiments, designed & fabricated test fixtures, and analyzed data for the Ophthalmic R&D department

Professional Skills

- Software:** Solidworks 2004-11/Simulation/Photoworks/Photoview360; ProE 2001-Wildfire 4.0/Intralink; Bunkspeed HyperShot; OneCNC 2000; Adobe Photoshop/Illustrator; Microsoft Office incl. Excel & Visio; MathCAD; SurveyMonkey.com
- Fabrication:** Rapid prototyping (SLA, FDM, SLS, ZCorp, etc), ShopBot 3-axis CNC, sheet metal tools (punch, brake, etc), woodworking tools (saws, drills, sanders, etc), vertical milling machine, lathe, grinder, electrical assembly (wiring, connectors, surface mount soldering, etc.)
- Affiliations:** Tau Beta Pi (TBP), American Society of Mechanical Engineers (ASME), Human Factors & Ergonomics Society (HFES), Usability Professionals Association (UPA), Engineers Without Borders (EWB)

Education

- North Carolina State University** || Raleigh, NC || Graduate Course || 3.667 2009
- Online graduate course through the Industrial Engineering department in Human Factors in Systems Design while working full time
- Northeastern University** || Boston, MA || Bachelor of Science in Mechanical Engineering || Summa Cum Laude, 3.831 2006
- Outstanding Senior Capstone Design Project (2006): Universally Usable Cellular Phone
 - University Honors Distinction (2006) & Outstanding Undergraduate Research award (Tech Expo 2005) for Honors thesis: “Cell Phones or Sell Phones? – Engineering a more usable interface through user profiles”
 - Ralph J. Bunche full academic scholarship (2001-06) & Alfred Ferretti scholarship (2003 & 2004)