

Nathan Delson

Department of Mechanical and Aerospace Engineering
University of California, San Diego
9500 Gilman Drive, La Jolla, CA92093-0411
ph:(858) 534-0655
e-mail: ndelson@ucsd.edu

Professional Preparation

University of California San Diego	Mechanical Engineering	B.S., 1986
Massachusetts Institute of Technology	Mechanical Engineering	M.S., 1990
Massachusetts Institute of Technology	Mechanical Engineering	Ph.D., 1994

Appointments

Teaching Professor and Director of the Mechanical Engineering Design Center, Dept. of Mechanical and Aerospace Engineering, UC San Diego, 1/08 – present.
Academic Coordinator and Director of the Mechanical Engineering Design Center, Dept. of Mechanical and Aerospace Engineering, UC San Diego, 7/99 – 12/07.
Director of the Mechanical Engineering Design Studio, Yale University Dept. of Mechanical Engineering, 7/96 - 6/99.
Lecturer, Yale University, Dept. of Mechanical Engineering, 7/95 - 6/99.
Co-founder and President of Coactive Drive Corporation. Developer of electromechanical actuator technology, 6/96 – 1/08.
Associate Structural Analysis Engineer, United Technologies, Advanced Systems Division, San Diego CA. Structural analysis and design for manufacturability, 7/86 - 6/88.

Publications

Five closely related publications:

Delson, N; Sloan, C; McGee, T; Kedarisetty, S; Yim, W; Hastings, RH., “Parametrically Adjustable Intubation Mannequin With Real-Time Visual Feedback,” *Simulation in Healthcare: The Journal of the Society for Simulation in Healthcare* 7(3):183-191, June 2012.

Wong W, Kedarisetty S, Delson N, Glaser D, Moitoza J, Davis DP, Hastings RH, “The Effect of Cross-Training with Adjustable Airway Model Anatomies on Laryngoscopy Skill Transfer,” *Anesthesia and Analgesia* 113(4): 862-68, Oct. 2011.

Shea D. Aiken, MD, Nathan Delson, PhD, Terence M. Davidson, MD, and Randolph H. Hastings MD., “A Two-Dimensional Model of Anatomic Relationships during Laryngoscopy”, *Anesthesia and Analgesia*, 105: 1118-1126, 2007.

Delson, N., Koussa N., and Tejani N., 2003, “Measuring 3D Force and Motion Trajectories of a Laryngoscope in the Operating Room” *Journal of Clinical Engineering*, October/December 2003, pp. 211-217.

Delson, N., Hastings R., Lee J., Patel B., Weinger M., 2002, “Expert Skill Acquisition for Improved Laryngoscopy Training” *The 10th Annual Medicine Meets Virtual Reality Conference*, Newport Beach, California January 23-26, 2002

Five additional publications:

- Delson, N., and Anderson M., "Optimization from a Working Baseline: A Design Education Approach," 2012 ASEE Annual Conference, San Antonio, Texas, USA on June 10 - 13, 2012, reference no. AC 2012-4118
- Houston J., and Delson N., "Synchronized Vibration Device For Haptic Feedback," U.S. Patent No. 7,919,945, issued Apr 5, 2011.
- Delson, N., Hanak, T., Loewke K., and Miller, D., "Modeling and Implementation of McKibben Actuators for a Hopping Robot" , 12th International Conference on Advanced Robotics, Seattle, Washington, USA on July 18-20, 2005. Best Paper Finalist.
- Delson, N., "Increasing Team Motivation in Engineering Design Courses" International Journal of Engineering Education, Special Issue: Design Education for the 21st Century, Vol. 17, No 4 & 5, 2001, pp. 359-366.
- Panjabi, M., Wang, E., and Delson, N., 1999. "Neck Injury Criteria Based on Intervertebral Motions and its Evaluation using an Instrumented Neck Dummy" Conference of the International Research Council on the Biomechanics of Impact (IRCOBI), Barcelona, Spain September 23 – 24, 1999

Synergistic Activities

Dr. Delson has expertise in robotics, design of biomedical devices, human-machine interfaces, and engineering education.

- Developed hands-on design courses at UCSD and Yale University, while developing sponsorship from industry and nonprofit organizations.
- Co-founder of company that developed and licensed force feedback technology.
- Developed instrumented training mannequin for airway intubation.
- Advised over 100 student design projects including over 20 medical device projects.
- Higher Education Liaison and Judge for US First Robotics competition for high school students (2007-present), and course developer for high school students interested in engineering (2005-present).

Collaborators and Other Affiliations

Recent collaborators:

Randolph Hastings (UCSD School of Medicine)
Lelli Van Den Einde (UCSD Structural Engineering)