NURCAN GECER ULU

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RESEARCH INTERESTS

Computational Design, Design for Manufacturing, Physics Based Modeling, Data-driven Design, Generative Design, Crowdsourcing.

EDUCATION

Carnegie Mellon University *August 2013 - May 2018*
PhD in Mechanical Engineering Department (GPA: 4.00/4.00)

Bilkent University *September 2010 - August 2012*
MS in Mechanical Engineering Department (GPA: 3.80/4.00)

Pennsylvania State University *Fall 2009*
Exchange Program in Mechanical Engineering Department (GPA: 4.00/4.00)

Middle East Technical University *September 2006 - June 2010*
BS in Mechanical Engineering Department (GPA: 3.79/4.00)

WORK EXPERIENCE

Palo Alto Research Center June 2018 - Present
Research Scientist Palo Alto, CA

Carnegie Mellon University August 2013 - May 2018
Research Assistant Pittsburgh, PA

Siemens Corporate Research Summer 2015, Summer 2016
Graduate Research Intern Princeton, NJ

Aselsan, Inc October 2012 - August 2013
R&D Engineer Ankara, Turkey

Bilkent University September 2010 - October 2012
Research Assistant Ankara, Turkey

SELECTED PUBLICATIONS

N.G. Ulu, M. Messersmith, K. Goucher-Lambert, J. Cagan and L.B. Kara, Wisdom of Micro-Crowds in Evaluating Solutions to Esoteric Engineering Problems, ASME Journal of Mechanical Design (JMD). 2019.

W. Zhang, J.Z. Yu, F. Zhu, Y. Zhu, **N.G. Ulu**, B. Arisoy, L. B. Kara. High Degree of Freedom Hand Pose Tracking Using Limited Strain Sensing and Optical Training. Journal of Computing and Information Science in Engineering. 2019.

N.G. Ulu, Computational Design and Evaluation Methods for Empowering Non-Experts in Digital Fabrication, PhD. Thesis, Carnegie Mellon University, Pittsburgh PA. 2018.

N.G. Ulu, S. Coros and L.B. Kara, Designing Coupling Behaviors Using Compliant Shape Optimization, Computer-Aided Design. 2018.

G. Wang, H. Yang, Z. Yan, **N.G. Ulu**, Y. Tao, J. Gu, L.B. Kara, L. Yao, 4DMesh: 4D Printing Morphing Non-Developable Mesh Surfaces. 31th ACM User Interface Software and Technology Symposium (UIST 2018).

W. Zhang, J.Z. Yu, F. Zhu, Y. Zhu, **N.G. Ulu**, B. Arisoy, L. B. Kara, High Degree of Freedom Hand Pose Tracking Using Limited Strain Sensing and Optical Training. ASME International Design Engineering Technical Conferences/CIE. 2018. Quebec City, Canada.

E.B. Arisoy, G. Ren, E. Ulu, **N.G. Ulu** and S. Musuvathy, A Data-driven Approach to Predict Hand Positions For Two-Hand Grasps of Industrial Objects. ASME IDETC, Charlotte, NC, 2016. *(Best Paper)*

N.G Ulu, L.B. Kara, Generative Interface Structure Design for Supporting Existing Objects, Journal of Visual Languages and Computing. 2015.

N.G Ulu, L.B. Kara, Generative Interface Structure Design for Supporting Existing Objects, International Conference on Distributed Multimedia Systems Workshop on Visual Languages and Computing (VLC). September 2015. Vancouver, Canada.

N.G. Ulu, Development of a Modular Control Algorithm for High Precision Positioning Systems, MSc. Thesis, Bilkent University, Ankara Turkey. 2012.

N.G. Ulu, E. Ulu, and M. Cakmakci, Design and Analysis of A Modular Learning Based Cross-Coupled Control Algorithm for Multi-Axis Precision Positioning Systems, IJCAS, 2016.

E. Ulu, **N.G. Ulu** and M. Cakmakci, Development and Validation of An Adaptive Method To Generate High-Resolution Quadrature Encoder Signals, ASME Journal of Dynamic Systems, Measurement and Control, 2014

N.G. Ulu, E. Ulu, and M. Cakmakci, Learning based cross-coupled control for multi-axis high precision positioning systems, ASME Dynamic Systems and Control Conf. (DSCC 2012), Ft. Lauderdale, FL, Oct 2012. *(Best Paper in Session)*

E. Ulu, **N.G. Ulu** and M. Cakmakci, Adaptive correction and look-up table based interpolation of quadrature encoder signals, ASME Dynamic Systems and Control Conf. (DSCC 2012), Ft. Lauderdale, FL, Oct 2012.

PATENTS

S. Musuvathy, G. Allen, L. Mirabella, L. Komzsik, **N.G. Ulu**, System and Method for Modeling of Parts with Lattice Structures, Publication Number:WO2017088134 A1, 2017.

E.B. Arisoy, S. Musuvathy, E. Ulu, **N.G. Ulu**, Methods and System to Predict Hand Positions for Multi-hand Grasps of Industrial Objects, Publication Number:WO2017132134 A1, 2017.

E. Ulu, E.B. Arisoy, S. Musuvathy, **N.G. Ulu**, System and Method for Build Orientation Based Volume Segmentation. Filed on April 10, 2017.

L. Yao, G. Wang, H. Yang, Z. Yan, **N.G. Ulu**, Y. Tao, J. Gu, L.B. Kara, Inverse Design Tools for Self-Assembling Non-Developable Mesh Surfaces via 3D Printing, Provisional patent filed on April 13, 2018.

FELLOWSHIPS AND AWARDS

The Mary Jane and Milton C. Shaw Fellowship, Carnegie Mellon University	*2015*
International Scientific Research Incentive Award, TUBITAK	*2014*
Student Travel Grant, ASME DSCC	*2012*
Graduate Fellowship, Scientific and Technical Research Council of Turkey (TUBITAK),	*2010 - 2012*
Full Scholarship for MS, Bilkent University	*2010 - 2012*

TECHNICAL SKILLS

Programming	C++, OpenGL, Qt, MATLAB, Python
CAD Tools & Rendering	SolidWorks, NX, Inventor, Rhino, Grasshopper, Blender
Simulation	Simulink, SimMechanics, NI LabView