

JOSEPH LUCIANI

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EDUCATION

McCormick School of Engineering at Northwestern University | Evanston, IL

Master of Product Design and Development | Spring 2016

Advanced training in design thinking, user-centered research, manufacturing strategy, and new product development.

College of Architecture at Illinois Institute of Technology | Chicago, IL

Bachelor of Architecture | Fall 2009

Comprehensive experience in the planning, design, and construction of built environments and their structures.

EXPERIENCE

College of Engineering at University of Connecticut

Design & Manufacturing Instructor | Feb. 2024 – Present

As part of a four-person staff team, I help operate the Innovation Shop, the College of Engineering's flagship student fabrication facility serving over 2,000 engineering students across 12 disciplines. I helped lead the shop's transition from a traditional service model, where access was limited to senior capstone teams and researchers, into a student-driven learning environment with hands-on access beginning in the freshman year, and I co-developed the curricular pipeline (ENGR1000 in the fall, ENGR1166 in the spring) that now brings every incoming engineer through the shop. I designed the shop's physical workflow as a pedagogical sequence, moving from the Ideation Studio to the Invention Studio to the Machine Shop, using visual connections between spaces to teach Design for Manufacturing and Assembly through progressive skill development in sketching, SolidWorks modeling, prototyping, drawings, and tolerancing. Day to day, I mentor senior capstone students through full system builds, consult with faculty and graduate researchers from across the university, and develop the training materials, certifications, and lab protocols that support roughly 8,200 student check-ins per year. To support the shop's scale I designed and built HuskyTracks, a custom multi-portal shop management web application that replaced manual tracking and gives the staff team unified visibility into access, training, and certifications, and I manage a fleet of 13 Bambu Lab and 6 Prusa 3D printers including a real-time monitoring dashboard now in development.

Technology Park at University of Connecticut

Director, Proof of Concept Center | Aug. 2016 – Feb. 2024

As Director of the Proof of Concept Center at UConn's Technology Park, I acted as the research and design front porch for university and industry relations, positioning the prototyping lab as an extension of tools and resources available to small and medium enterprises (SMEs). I partnered with more than 20 SMEs on 24 successfully executed sponsored projects spanning rapid prototyping, manufacturing efficiency, and workforce-driven product development, providing safe access and equipment training to industry engineers and to UConn graduate and undergraduate students working alongside them. I oversaw design, equipment selection, and workflow planning of the Center within the Innovation Partnership Building itself, working directly with the architect and construction manager, and procured and operated a comprehensive range of prototyping equipment including 5-axis CNC milling, CNC turning with live tooling, abrasive waterjet, laser cutting, FDM, material-jetting and SLA 3D printing, 3D scanning, and a Universal Robots collaborative robot. I authored PDF "quick guides" for designing and modeling for each piece of equipment, and connected industry partners with allied UConn services including SEM/TEM material characterization, MicroCT reverse engineering, and FEA modeling. In the final two years I focused on workforce-driven projects, identifying disliked, repetitive, dirty, or dangerous tasks on manufacturing floors and addressing them with fixtures, tooling, gauges, assembly guides, and targeted automation.

Designing meaningful experiences and purposeful built environments through hands-on strategies

SKILLS

Curriculum Development
Shop & Lab Management
Student Mentorship
Certification Programs
Industry Outreach
Technical Drawing & GD&T, DFMA
Hand Drawing
Concept Sketching
Spatial Visualization
Digital Design
Additive & Subtractive
Prototyping
Physical Mockups
Iterative Fabrication

SOFTWARE

Autodesk Fusion 360 (*daily for modeling and CAM*)
Mastercam (*through UConn's CNC Software partnership*)
SolidWorks
Rhinoceros + Grasshopper
AutoCAD
SketchUp
Adobe Creative Cloud (Illustrator, Photoshop, InDesign)
Slicers:
Bambu Studio
PrusaSlicer
PreForm
Cura
Scanning:
PolyWorks
Geomagic Design X & Inspection X

Segal Design Institute at Northwestern University

Senior Prototyping Specialist | July 2012 – July 2016

Provided prototyping support across the McCormick School of Engineering and Segal Design Institute, managing daily operation, training, and use of the McCormick Prototyping Lab and mentoring 400+ first-year engineering students annually as they navigated a year-long, human-centered design course addressing real-client problems in rehabilitation, healthcare, industry, and education. I piloted a practice called Design Review Zero with faculty advisors, an early review where prototyping staff identified training needs, suggested materials, and helped teams start with low-fidelity mockups, supporting iterative design around client needs. I taught additive and subtractive fabrication including conventional mill and lathe work alongside digital tools (laser cutter, waterjet, CNC, CAD/CAM, 3D printing, 3D scanning), and supported Mechanical Engineering's Rapid Prototyping Lab by processing 3D models and training users on a Z Corp ZPrinter 450, Fortus 250mc, and Objet Connex 350. Through Northwestern's Center for Talent Development, I also designed and taught two three-week summer courses for high-achieving high school students: 3D Printing & Product Development (Summer 2014) and Engineering Design Studio.

IdeaShop at Illinois Institute of Technology

Lab Manager | July 2010 – July 2012

Managed daily operation, certification, training, and program delivery of the IdeaShop for IIT students, staff, schools, community groups, and the surrounding Bronzeville and Bridgeport neighborhoods. Mentored 40+ teams in IIT's Interprofessional Projects (IPRO) program, supporting cross-disciplinary student teams tackling real-world client problems. Managed the Tellabs Foundation Grant, overseeing the purchase and installation of four new pieces of equipment (CNC router, CNC vertical mill, vacuum former, electrical test bench) and developing faculty and student projects to leverage them. Also supported Mechanical and Bio-Medical Engineering Senior Design in spring 2011 and 2012 and led the Product Realization Workshop for high school students in summer 2011.

AWARDS & HONORS

Connecticut Science Center - 2025 STEM Achievement Award | 2025

Recognition for individuals and organizations whose innovation, leadership, and community impact are shaping the future of science, technology, engineering, and mathematics across Connecticut and beyond.

Northwestern University Star Award | Summer 2014

Staff-Team Appreciation and Recognition (STAR) Leadership Award.

Baden-Württemberg, Germany Wood Award | 2012

International recognition for craftsmanship and design in wood construction.

Association of Collegiate Schools of Architecture | 2011

Collaborative Practice Honor.

American Institute of Architects - Distinguished Building Award | 2010

Recognition for the design and construction of a small field chapel in Baden, Germany, completed as part of a student team at IIT over two semesters. Primary involvement was construction documents in spring 2009 and construction of the chapel over the subsequent summer.

EQUIPMENT

(Managed over years at IIT, Northwestern, and UConn)

Milling: Haas VF-2; CM-1 with TR-70 trunnion (5-axis); (4) Super Mini Mills; ProtoTRAK knee mills; PocketNC V2-50
Turning: Haas CL-1; Hardinge HLV-H; Nardini; ProtoTRAK
Routing: ShopBot; ShopSabre 4896 and R8
Waterjet: Flow Mach 2b; OMAX ProtoMAX
Laser: Universal Laser Systems ILS12.150D and X660; Epilog Mini, Zing, and Helix
3D printing: Stratasys Fortus 450mc, F370, and 250mc; Objet Connex 350; Formlabs Form 2
3D scanning: FARO Quantum S scanning arm
Robotics: Universal Robots UR10 cobot with rotary table and Robotiq 2F-85 gripper
Welding: Miller MIG and TIG; plasma cutter
Fabrication: sheet metal brake, shear, roll, and notch; DoAll horizontal and vertical bandsaws; SawStop cabinet saw; panel saws
Other: Formech 686 and 450DT vacuum formers; Singer and Juki sewing machines; electronic test equipment; paint booths