

March 2025

Nathan Jackel

216.280.7523 / NatanJ@yahoo.com / NatanJackel.com

July 2021 to Present: Senior Mechanical Engineer, Voxel Innovations, Raleigh NC – Voxel Innovations is a startup specializing in Electrochemical Machining (ECM), a high-precision manufacturing process that uses electrical currents and an electrolyte to shape complex metal components with high accuracy and minimal tool wear. As engineering lead, I have been responsible for solving complicated technical challenges and advancing technology from demonstration to mass production.

- Led the transition from proof-of-concept to a \$6M automated production line for the rifling of Axons Taser 10 cartridges. Designed ECM machining equipment, robotics, inspection systems and coordinated with suppliers to source large-scale equipment enabling the production of 12M parts annually to support Axon's mission of preventing gun deaths.
- Managed multiple R&D projects, including internal finishing of metal 3D-printed parts, machining micro-holes with extreme aspect ratios, STEM drilling, and profiling of turbine blades for clients such as the U.S. Navy, US Airforce and Siemens.
- Designed and commissioned CNC ECM machines for high precision machining in highly corrosive, toxic environments.

November 2016 to June 2021: Lead Mechanical Engineer, Formlabs, Somerville MA - Early member of the product development R&D team designing the Fuse Selective Laser Sintering 3D printer. This printer allows rapid and affordable in-house fabrication of functional parts, utilizing a high quality yet low-cost mechanical system.

- Owned the printer's motion systems and optomechanical components from concept through mass-production.
- Conceived the concept for the Form Auto, enabling a multi-million-dollar revenue stream for Formlabs.
- Responsible for the design and development of assembly fixtures and calibration equipment for the Fuse 3D printer.

April 2013 to August 2016: Automation Engineer, Ditron Precision Ltd, Israel - Ditron produces high precision turned parts in large volumes, and has diversified into the research, development, and production of dental implants.

- Sole engineer responsible for factory automation including the design and development of machines for the production line. Owned the full lifecycle from initial concept and feasibility study through design, sourcing and final integration.
- Optimized factory operation by designing jigs, tools and metrology instruments needed for the manufacturing process.
- Supported the dental division by designing tooling and jigs for the manufacturing process conducted in a clean room. Helped scale implant production from the development to the production stage.

August 2010 to March 2011: Mechanical Design Engineer Intern, R&D department, CartiHeal, Israel - CartiHeal is a medical device company developing an FDA approved implant that repairs damaged knee cartilage. Responsibilities included design of parts and tools used in the laboratory, laboratory work, and development of the implant manufacturing process.

2001 to 2010: Small Business Owner, WhiteSapling - Founded and managed a successful small business primarily involved in woodworking and handyman work, but diversified to IT support, creation of decorative olive wood objects on a woodturning lathe, and development and installation of gray water reclamation systems of a unique design.

2006 to April 2007: Sergeant First Class, IAF, IT Technician - Served in the IT division of the Israeli Air Force as a member of the Help Desk support team. During this period, valuable skills were acquired in customer relations and problem solving under pressure.

May 2004 to 2006: Sergeant, IAF, F16-I Avionics - Served as an Avionics Aircraft maintenance technician as an O-level technician for the electronics systems of the F16-I fighter jet on the flight line, and in the Fleet Readiness Center as an I-level technician specializing in the radar and navigation [EGI] systems.

January to May 2004: Electronics Technician, Electro-Optics Division, Soreq Nuclear Research Center - Responsible for the design and construction of circuits, and characterization of new electronic components and sub-blocks, while working with power electronics. Was involved in the R&D of a state-of-the-art, high power, fiber-laser laser driver for an airborne system.

Education:

2007 to 2012: Mechatronics student, Ariel University, B.Sc. - Completed successfully a mechanical engineering degree specializing in electronics engineering, gaining expertise Mechanical Design and analysis, fluid mechanics, controls and programming.

September 2002 to April 2004: Electronics Practical Engineering student, Ort - Graduated as a Practical Engineer in Electronics.