

matthewmccord.com/products
matthewmccord.com/patents
[linkedin.com/in/mccordm](https://www.linkedin.com/in/mccordm)

Skills

- Creative Design
- System Architecture
- Technology Innovation
- HW & SW Engineering
- UX & UI Design
- Rapid Prototyping
- Product Development
- Team Leadership

Software

- Microsoft Office
- Adobe Creative Suite
- SolidWorks
- Asana, Notion, Slack
- Visual Studio

Programming

- HTML & CSS
- Java & JavaScript
- ASP.NET
- Python
- C#

Patents

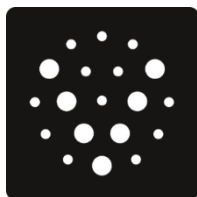
- US11192100 Multi-Factor Urine Test System That Adjusts For Lighting And Timing
- US10928325 Urine Test System With Nutritional Recommendations
- US10383606 Toilet Based Urine Analysis System
- US10602669 Narrowband Photosynthetically Active Radiation Substantially Only At Each Of Multiple Emission Wavelengths Yields Good Photosynthesis At Reduced Energy Cost

Summary

Inventor and entrepreneur, co-founder of multiple tech startups, solutions consultant, engineering specialist, and freelance designer. Creator of new products and technologies on a mission to help people live healthier and happier lives while making a positive impact on our planet. Over 10 years of experience developing industrial tools, automation equipment, medical devices, and consumer products with small to large scale companies. Expert in product development, science and engineering, software design, intellectual property, biotech startups, market research, raising capital, coming up with bright ideas and making them into beautiful products.

Specialties include technology innovation, system architecture, mechanical engineering, user experience design, rapid prototyping, manufacturing, automation, sensors, robotics, photonics, spectrophotometry, photochemistry, plant biology, phytonutrients, medical science, health tech, immunoassays, biochemistry, microbiology, computer vision, machine learning, data intelligence and visualization.

Experience



Vessel

Co-founder, Head of Hardware and Innovation

Aug 2017 – Apr 2022 · 4 yrs 9 mos

- Created the world's first affordable and consumer friendly in-home instant test for a wide range of vitamins and minerals, hormones, and more
- Helped raise over \$20M in funding from VCs and angel investors
- Engineering and science team leader
- Developed hardware and consumables
- Ran scrum meetings, weekly sprints, and department OKRs (Agile Black Belt)
- Helped design app user interface (4 stars in app store)
- 20,000 monthly active users and counting!



Universe Innovation

Founder, Solutions Consultant

Jan 2016 – Apr 2022 · 6 yrs 4 mos

- New product and technology development
- Advanced problem solving and innovation services
- Building more "world's first" things with positive impact



Elite Tech Consulting

Founder, Engineering Specialist

Oct 2011 – Apr 2022 · 10 yrs 7 mos

- System architecture, mechanical and electrical engineering
- Photonics, optics, thermodynamics, microfluidics
- Industrial design, human factors, user experience
- Rapid prototyping and design for manufacturing



Endless Vision

Founder, Freelance Designer

Jan 2002 – Apr 2022 · 20 yrs 4 mos

- Developed professional websites, graphics, brand strategy, and targeted marketing
- Deployed custom web solutions using platforms including WordPress and Shopify
- Implemented search engine optimization (SEO) to help businesses increase sales
- Designed interfaces and user experiences, bringing unique style to every project



Symbiotic Systems

Co-Founder, CTO

Oct 2011 – Apr 2018 · 6 yrs 7 mos

- Created the world's first app controlled agricultural LEDs to deliver sun intensity light with dynamic spectrum spanning from ultraviolet to infrared
- Demonstrated 300% increase in tomato fruit mass (grams per watt) in third party trials against premium HPS lights
- Demonstrated up to 500% increase in various terpenes in trials against HPS lights
- Invented and patented multiple power and lighting technologies
- Set up production lines and supply chains with dozens of custom component manufacturers
- Designed and manufactured commercial grade ultra high intensity 11-band spectrum adjustable intelligent LED systems for agricultural and biotech applications
- Coordinated scientific research trials with amazing results and produced data driven white papers
- Produced technical data, business plans, slide decks, financials, raised capital



Merlin CSI

Electromechanical Systems Engineer

Mar 2012 – Dec 2014 · 2 yrs 10 mos

- Created mobile and web applications for presenting live data and analyzing historical data from proprietary computer systems in the field connected by satellite and cellular networks
- Developed industrial automation systems with programmable logic controllers

- Designed, manufactured, and assembled custom robotics for various applications
- Provided engineering services onsite, integrating into different engineering teams
- Programed CNC machines to fabricate parts from aluminum, steel, titanium, invar
- Created fixtures and procedures for manufacturing inspection and quality control
- Designed user experience, human machine interaction, and software interface usability



CareFusion

Consultant, Mechanical Engineering & Industrial Design

Nov 2012 – Feb 2013 · 4 mos

- New Product Development (Codename Trident)
- Responsible for mechanical and industrial design of multiple touch screen products
- Created recognizable shapes across family of products with modern surfacing techniques such as continuous curvature
- Designed injection molded plastic housing to be ergonomic, durable, and sanitary
- Selected special materials to survive aggressive cleaning chemicals and drop testing
- Design eliminated fluid ingress and features that trap dirt
- Design included capacitive flex circuit to attach inside of housing and detect touch in multiple areas
- Created shielding to protect display signal and noisy electronics from electromagnetic interference
- Developed specification for projected capacitance touch screen stack and mechanical button stack with metal dome switch and light guide illumination
- Designed to be field serviceable and easily replaceable



Nordson Asymtek

Consultant, Mechanical Engineering

Mar 2012 – Oct 2012 · 8 mos

- New Product Development (Codename G5)
- Designed and constructed industrial grade enclosure for secure mounting and connecting of proprietary electronics, rack mount computers, and ultra high voltage three phase power supplies allowing rapid access for service and maintenance
- Performed failure mode and effect analysis (FMEA) on mechanical parts and assemblies
- Designed, assembled, and tested complex pneumatics for operation of pick-and-place type machine including conveyor system, precision fluid dispensing valve, cooling and heating
- Evaluated solenoid valves and electropneumatic regulators from all applicable pneumatics manufacturers comparing response times and hysteresis to qualify products for use



Environmental Lights

Product Engineer

Feb 2011 – Oct 2011 · 9 mos

- Designed and tested LED lighting and power systems for custom applications including high profile television shows and large scale energy saving installations in hotels and restaurants
- Developed high efficiency LED products to stimulate algae growth in bioreactors which consume exhaust gasses and produce renewable crude oil and feedstock
- Communicated directly with customers to determine unmet needs and demand for new products
- Introduced new products after extensive testing and created easy to understand technical documents to describe installation and operation of complex electrical systems
- Constructed professional quality photography studio and created product photos and videos
- Handled sales and technical support with 100% customer satisfaction and retention
- Performed market leading research on LED bulbs and magnetic driver compatibility with forward phase dimmers, reverse phase dimmers, and phase adaptive dimmers

Cognitive TPG



Mechanical Engineer

Jun 2008 – Oct 2010 · 2 yrs 5 mos

- Successfully managed engineering projects from prototyping to manufacturing
- Communicated with customers, agreed upon deadlines, and delivered products ahead of schedule
- Produced solid models and engineering drawings with geometric dimensions and tolerances (GD&T)
- Learned to design complex parts effectively for manufacturability with different materials and processes such as 5 axis machining, wire EDM, stamping, casting, injection molding, and rapid prototyping
- Purchased ASTM and ISO standards and published technical procedures in the form of user friendly step by step manuals to reduce inconsistency among parts designed by different engineers
- Conducted thermal tests and stress tests to understand modes of failure and improve reliability



LawInfo

Web Developer, SEO Specialist

Jun 2006 – Aug 2007 · 1 yr 3 mos

- Employed strategies to increase traffic from search engines and revenue from ads
- Created website generator tool with database of legal content and more than 50 CSS templates reducing the development time frame for most websites by 90%

Education



Washington University in St. Louis

Bachelor of Science, Mechanical & Aerospace Engineering

Aug 2004 – May 2008 · 4 yrs

- Activities and Societies: University Nanosatellite Program, EnCouncil, Vertigo 2008, Martial Arts (Shotokan and Goju-Ryu)
- Advanced Coursework: Biomedical Engineering, Mechanical Design and Machine Elements, Manufacturing Processes, Mechanical Behavior of Composites, Advanced Space Mission Design, Advanced CAD and Finite Element Analysis (FEA)
- Additional Studies: Business Management, Micro and Macro Economics, Finance



San Dieguito Academy

Aug 2000 – May 2004 · 4 yrs

- Activities and Societies: Varsity Tennis, Leadership, Science Fair
- Advanced Coursework: College Computer Programming (Java)

Volunteering



Chopra Center for Wellbeing

Volunteer

Oct 2016 – Dec 2017 · 1 yr 3 mos

- Set up events exploring research on epigenetics, microbiome, and consciousness



Abraxas Community Farm

Founder, Educator, Advisor

Jun 2015 – Apr 2022 · 6 yrs 11 mos

- Donated 3000 gallon sustainable aquaponics system with 500 tilapia and custom hydroponics to Abraxas High School
- Rebuilt the whole living system on campus to start the Abraxas community garden
- Educated teachers and students on balancing the system and growing healthy food
- More info and pictures at <https://www.instagram.com/abraxasgardenkitchen>



Machine Learning Society

Hackathon Speaker and Technology Advisor

Jan 2020 – Mar 2020 · 3 mos

- Speaker and team advisor at the Kinetic Playground hackathon sponsored by Intel