Matthew Tavares

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Battle-hardened and seasoned Mechanical Design professional with extensive and demonstrated experience in Mechanical Design, Mechanical Engineering, Electrical Engineering, Programming, Consultative and Technical Sales Support, and Prototype and Production Fabrication. Adept in identifying and proposing innovative solutions to meet client requirements. Inspiring leader with a track record of skillfully managing high performing teams to achieve aggressive project objectives. Strong interpersonal skills proficient in nurturing stakeholder relationships and communicating effectively with clients, management, vendors and other engineering resources. Matt lives in Houston, just got engaged, builds BattleBots, and speaks survival Spanish.

SOFTWARE

Over 10 Years:
Solidworks • Autocad • C • C++ • Linux
Microsoft Office • Photoshop • Windows
Adobe CC • HTML • CSS • Python • Mac
Over 5 Years:
Inventor • EPDM • Solidcam • GCode
Rhino • Matlab • Java • JavaScript • AWS
Familiar:
Simplify3D • OnShape • Sketchup
Labview • Fusion360 • PHP • LaTeX
ArcMap • GPlates • SageMaker

LINKS

Blog: **TavaresLabs.com**
Twitter: **@MatthewTavares**
LinkedIn: **MJTavares**
Github: **MattTavares**

AWARDS

2010	Recognition for Excellence by Forge House Group
2009	1st Battlebots (mentor)
2008	2nd BotsIQ 15lb
2007	Texas Hall of Heroes
2007	1st BotsIQ
2007	Best Engineered Bots IQ
2007	Xerox Creativity FIRST
2006	2nd FIRST Regional
2006	Eagle Scout
2005	Best Engineered BattlebotsIQ
2004	Coolest Robot BattlebotsIQ

EDUCATION

UTDALLAS
MECHANICAL ENGINEERING
Richardson, TX

RICHARDSON MAGNET HS
Richardson, TX

EXPERIENCE

BHP | INNOVATION SPECIALIST
Oct 2018 – Jun 2019 | Houston, TX

- Developed and Built infrastructure for the Houston Innovation Hub TIDE (Technology, Innovation, Discovery, & Experimentation) Lab to rapidly develop new Minimum Viable Product (MVP) solutions for petroleum and mining business problems with on-premises and cloud compute, 3D printing, and electronics prototyping capabilities.
- Successfully developed and trained prototype machine learning models to perform visual analytic object detection tasks using AWS SageMaker.
- Developed and tested a fully working solution for extracting positional text embedded into video for use in GIS analysis in 3 working days.
- Performed several proof of concepts (PoCs) to explore geospatial and geoscience workflow efficiencies.
- Operated as an Agile team member and backup scrum master with daily scrums, two week sprints, retrospectives, & backlog reviews organized on Jira.

PAUL BERNHARD EXHIBIT | INTERACTIVE SYSTEMS, MECHANICAL DESIGN, ELECTRICAL DESIGN, PROGRAMMING, IT DIRECTOR
Oct 2015 – Oct 2018 | Austin, TX | Houston, TX | Dallas, TX

- Worked collaboratively and as a team lead with a production group of other engineering staff, fabricators, exhibit designers, and content developers to create interactive exhibits and movie set props.
- Engineered a self-adjusting friction drive and 16-foot diameter rotating carriage electromechanical system for the giant counter-rotating drill bit featured centrally in the Wiess Main Hall.
- Produced thousands of pages of manufacturing documentation and associated 3D models utilizing mostly SolidWorks, and also Rhino, AutoCAD, Fusion360, SketchUp, and Adobe Creative Cloud.
- Worked with a wide range of fabrication techniques such a Waterjetting, Milling, Lathing, Welding, Fiberglassing, Vacuum Forming, and Others
- Proposed an innovative hinge mechanism for a massive movie prop for the upcoming Alita BA film, then co-lead an in-house fabrication team to complete it on an ambitious 5-week build schedule, and later acted as the mechanism's on-set and on-scene operator
- Designed and implemented a firewalled interactives network and protocol stack utilizing Linux, embedded electronics, web, and IOT technologies that allows nodes to communicate, bringing new levels of interaction, controllability, and automation, while securely allowing real-time remote-access for off-site and even on-cell-phone troubleshooting and code-improvements.
- Designed and programmed the mechanical, pneumatic, and electrical systems for the robotically actuated 50% scale Top Drive, Roughneck, and Hydraracker on the Wiess simulated Drill Floor.

- Custom designed a brushless gimbal motor speed controller and associated mechanical design for 30 spinning scale-size windmills used in the 2500 ft^2 'Energy City' projection mapping exhibit.
- Utilized Solidworks Simulation and Autodesk Fusion360 to perform FEA studies on structures and mechanisms in addition to preparing 3D model packages for independent verification by an external structures firm.
- Engineered a complete mechanical, electrical, and programming solution for a 42-foot long ceiling-mounted motorized track system that moves a replica satellite over guest's heads while cam-rotating.
- Retrofit an Oceaneering donated hydraulic underwater robot arm to be pneumatically guest operated safely. Design and program a corresponding interactive BOP inspired lever game that guests play with the ROV arm.
- Rebuild the IT network and infrastructure for PBE over four sites while migrating the business to G-Suite and providing 10GigE access to over 100 Terabytes of safely backed up network storage to local network users.
- Advise on project feasibility and costs in client-facing meetings while fostering good relationships throughout the process of setting expectations and goals.

VERCÉT LLC | MECHANICAL RESEARCH AND DESIGN
Jul 2009 – Sep 2015 | Carrollton, TX | Darlington, UK

- Oversee complete mechanical product design cycles of more than 20 projects with a focus on geophysical exploration recording systems and equipment, undersea solutions, industrial manufacturing, and high volume manufacturing.
- Design key mechanical and electrical systems for a robotic ship project that completely automated the deployment and recovery of a custom off-shore seismic exploration and acquisition system
- Lead a mechanical engineering team to design a land seismic nodal recording system with an emphasis on manufacturability, durability, and performance with production counts regularly exceeding ten thousand
- Regularly designed high-volume parts to be produced with Injection Molding
- Implement and maintain company drafting and part numbering standards
- Travel overseas to train colleagues to use the SolidWorks software suite
- Diagnosed and repaired all damaged Data Taxis for two years before writing repair documentation and training an off-site facility to take over the repairs
- Administrate SolidWorks Enterprise PDM, as well as other IT business services
- Design and maintain three websites including Vercét's primary web presence.
- Use SolidCam, write manual g-code, and rewrite post-processors to manufacture parts, fixtures, and tooling on a Haas VM3 mill with 5th Axis and a multi-spindle TL-15 Lathe with live tooling
- Built an R&D, electronics, and manufacturing lab from the ground up after moving to a new facility

DRS TECHNOLOGIES | COOP MECHANICAL ENGINEERING
Jan 2009 – May 2009 | Richardson, TX

- Design mechanical systems used in the automated manufacturing process of infrared sensors
- Learn and use Pro/ENGINEER Wildfire 4.0 in conjunction with TeamCenter
- Adhere to strict military standards and specifications for all parts of design
- Create GD&T part drawings and files for manufacturing

HANSON ROBOTICS | ROBOT ENGINEER
Apr 2007 – Sep 2008 | Richardson, TX

- Electrical and mechanical design and manufacturing of the Robo-Kind and Human-Kind product lines.
- Utilize Solidworks to design, build, and evaluate mechanical systems.
- Developed and implemented the electronic architecture of the Zeno robot
- Travel and present at trade-shows and conferences such as NextFest and AAAI
- Collect data, prepare, and publish datasheets on robot specifications such as power consumption, sound output, and proprietary material properties
- Installed Zeno exhibit at Museum of Science and Industry; trained employees to use several of the robots' mechanical systems safely and effectively
- Co-Published a paper titled "Zeno: a Cognitive Character" at AAAI-08 Chicago

BATTLEBOTS | TEAM CAPTAIN AND DRIVER
Aug 2004 – 2011 | Richardson, TX

- Competed in BattleBots and BotsIQ competitions with The Blender, a 120lb combat robot awarded 1st place in 2007, 2009, and 2011
- In 2008 formed the UTDallas combat robot team who continue to compete with the 120lb Blender to this day, recently bringing the bronze medal at the 2015 robogames