

# AVINASH K. RAVISHANKAR

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## EDUCATION:

### **Rice University (Houston, TX) - M.S. Data Science**

Expected December 2026

Coursework: Machine Learning, Computer Vision, Bayesian Methods, Big Data (PySpark/AWS EMR), DevOps Tools

Teaching Assistant: COMP 665 Data Visualization — Python (matplotlib, Plotly, seaborn), Tableau, Power BI, time series analysis

Data Competitions: Hex Data Hackathon | NCL Cybersecurity CTF (log forensics, network analysis, data challenges)

### **Rice University (Houston, TX) - B.S. Mechanical Engineering**

2008-2012

Activities & Coursework: Society of Automotive Engineers (SAE), Rice Robotics Team, MATLAB, System Design

## INTERN EXPERIENCE:

### **Computer Vision Research Intern | Digital Health Institute & Rice University (Houston, TX)**

May 2026 - Present

*Tissue material characterization for autonomous surgical robots*

- Developed 500 GPU-accelerated soft-body physics simulations on an NVIDIA Titan X Pascal using the Genesis simulator in Python to model tissue deformation for autonomous robotic surgery
- Studied and implemented 5 research papers, including NVIDIA Research's DiSECT, and Uniphy, to understand differentiable simulation techniques for estimating material properties with video processing.
- Building a PyTorch-based machine learning pipeline to identify tissue material characteristics (stiffness, elasticity) from RGB video using GPU-accelerated physics simulation with NVIDIA's Isaac Sim, targeting surgical robotics and haptic feedback applications.

### **Data Science Intern | Houston Texans (Houston, TX)**

September 2025 - October 2025

*4 week data science project to define Explosive Plays sponsored by Strength in Numbers*

- Built Python (scikit-learn, pandas, numpy) classification models achieving 82% accuracy across 600+ sequential events, engineering time-series features from spatial positioning and velocity sensor data.
- Developed an automated SQL pipeline and presented modeling recommendations to the operations team.

## WORK EXPERIENCE:

### **Sr. Product Manager | TaskTag (Houston, TX)**

Jul 2022 — May 2025

*Mobile and Web app for construction project management through chat*

- Managed distributed engineering team (12 engineers, 2 QA across 8 countries) to launch mobile/web application acquiring 2,000+ users within 3 months; built SQL analytics dashboards and conducted A/B testing to optimize product features

### **Sr. Product Manager | Mesos (Houston, TX)**

Mar 2021 — Aug 2022

*Autonomous stratospheric drone and aerial imagery with computer vision and machine learning*

- Led a 2-person engineering team designing stratospheric UAVs with autonomous onboard imaging systems, integrating cameras, GPS, and barometric sensors for real-time embedded navigation and tracking.
- Developed computer vision algorithms using CNNs (Python, TensorFlow) for real-time object detection on edge hardware, reducing customer operating costs by an average of \$10,000 annually.

### **Product Manager | daytum (Houston, TX)**

Jan 2019 — Feb 2021

*Online data science education. Software to teach data science and machine learning to energy professionals*

- Built Learning Management System in Anaconda (Jupyterhub, Postgres, Docker) serving 500+ engineers across 12 energy companies. Designed curriculum alongside technical team. Topics ranged from linear regression to neural networks and Pytorch. Recorded and distributed 50+ hours of data science education content.

### **Product Manager | Muvve (Houston, TX)**

May 2016 — Jan 2019

*Fitness events marketplace. B2B2C Product. Connecting fitness enthusiasts to local fitness events*

- Managed 2 engineers and 1 designer to launch an iOS fitness marketplace with 1,000+ downloads, analyzing user behavior across 20,000+ contacts via SQL to drive a 10% revenue increase for 20+ partner companies.

### **Mechanical Engineer | OXY Occidental Oil and Gas**

Jun 2009 – Aug 2015

*Oil and Gas E&P Upstream (Permian Basin, Bogota, Bakersfield)*

- Managed large-scale sensor and corrosion datasets across 200+ miles of pipeline infrastructure and 50 well sites, applying risk modeling software and data analysis for predictive maintenance and failure prevention.