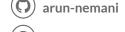
Arun Nemani



US Citizen







arunnemani.com



Education

PhD | Biomedical Engineering RPI | 2013-2017

- Research: machine learning, image processing, brain imaging, surgical skill assessment
- Advisor: Suvranu De, Xavier Intes

MS | Biomedical Engineering RPI | 2010-2012

• Research: image processing, virtual simulators, surgical skill assessment

BS | Biomedical Engineering

University of Minnesota - TC 2005-2009

Skills

Languages

Expert python • SQL • matlab

Proficient

CSS • bash • C++ • HTML • R

Machine Learning

Open source frameworks pytorch • scikit-learn • pandas numpy • scipy • catboost • lightgbm cuDF • cuML • shap

Algorithms

gradient boosting • SVM • clustering regression • classification • PCA/LDA decision trees • NLP model selection • model validation

General

AWS S3 • AWS EC2 • postgres elasticsearch • kibana • tableau linux • mac • UNIX • git • docker ATFX • jupyter • sublime • atom vim • flask • dash • gunicorn matplotlib • seaborn • plot.lv nginx • OpenCV • REST api • cron

Experience

Sr. Data Scientist | Food Genius (acquired by US Foods)

Jul 2018 - present

- Designed, built, and deployed a full-stack, machine-learning based web app that predicts supply chain service levels enterprise wide, with 36% higher balanced accuracy than food industry standards.
- Manage the core data science team at US Foods to execute on cross-functional business initiatives across merchandising, supply chain, and marketing teams

Research Scientist | Rensselaer Polytechnic Institute

Sep 2010 - Dec 2017

- Developed and validated machine learning models (linear discriminant analysis, support vector machines, and logistic regression) using brain imaging data to assess surgical motor skill proficiency
- Validated classification models to robustly (ROC AUC = 0.94) predict motor skill levels with a 113% higher accuracy than current US Surgery Board Certification methods
- Led three multi-institutional NIH clinical studies with \$2M of funding in collaboration with Massachusetts General Hospital, Harvard Medical School, Yale Medical School, and University at Buffalo

Manufacturing Engineer | St. Jude Medical (acquired by Abbott) Jun 2009 - July 2010

- Leveraged computer vision (OpenCV) and machine learning to implement a real-time medical device part inspection system for the cardiovascular diseases division
- Used data driven and analytical methods to prove value of automated part inspection system resulting in net cost reductions of ~\$200k/year

Key Publications and Talks

Articles

- Assessing bimanual motor skills with optical neuroimaging Science Advances
- Convergent validation and transfer of learning studies of a virtual reality-based pattern cutting simulator Surgical Endoscopy %
- Noninvasive brain imaging demonstrates that surgical skills transfer from training simulators to ex vivo models JACS %

Conference podium talks

- Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) %
- American College of Surgeons (Clinical Congress)
- Optical Society of America (OSA)

Social good and interests

Social good

- Tutored several adults ranging from jail inmates to single working moms to help them achieve their GEDs. www.lvorc.org
- Mentored at-risk, low-income Albany high school students to help them academically succeed and engage them in STEM programs. www.4thfamily.org

Interests

- I'm a huge film buff and have seen almost every major TV series on HBO. Want to kill a few hours? Ask me about the Sopranos, The Wire, or GoT
- I'm also a training pilot and love flying around Chicagoland