ANNE EN-TZU YANG

Minneapolis, MN | anneyanget@gmail.com | (617) 309-9419
github.com/aety | linkedin.com/in/aetyang | sites.google.com/view/aety

SKILLS

- **Languages**. Python, SQL, Matlab, LaTeX, HTML, Javascript
- **Packages**. Pandas, Flask, Numpy, Scipy, scikit-learn, beautifulsoup, PostgreSQL, Matplotlib, Google Developers Charts, Matlab regionprops, Facebook Prophet
- **Tools**. Git, Github, Jupyter Notebook, Linux, API
- **Knowledge**. medical imaging (DICOM), machine learning (convolutional neural network, random forest regressors, neural network classifications), statistics (Generalized linear model, t-test, ANOVA)

EXPERIENCE

- **Data Science Fellow**. Insight Data Science *(Minneapolis, MN)* *09/2019 - present*
  - Deployed a web app to recommend best time to ride Paris metro based on air quality prediction.
  - Utilized Prophet to predict hourly PM10 level, resulting in cross-validation error of 12% (SMAPE).
  - Identified predictors correlated to air quality by $R^2 = 0.96$ using scikit-learn's random forest regressor.
  - Presented results as interactive figures to intuitively inform passengers of health risks.
- **Postdoctoral Researcher**. Inst. for Intelligent Systems and Robotics *(Paris, France)* *09/2018 - 08/2019*
  - Designed a marker system for 3D intraoperative surgical tool tracking from 2D X-ray images.
  - Employed convolutional neural network to reconstruct 3D orientation at $\sim 10ms$/frame (errors $< 1°$).
  - Published results at IEEE and European surgical robotics conferences, *tinyurl.com/cath2019*.
- **PhD Intern**. Sanofi, Translational Informatics Group *(Bridgewater, NJ)* *06/2017 - 08/2017*
  - Collaborated with pharmacologists and immunologists on adding a new module to existing computational model to simulate periostin (protein) in asthma formation and treatment.
  - Wrote MATLAB scripts to automate statistical tests and data visualization to expedite data analysis on 10k entries of clinical trial data.
- **PhD Candidate**. Northwestern University *(Evanston, IL)* *09/2012 - 08/2018*
  - Investigated the neural pathway of rat whiskers to understand human's sense of touch.
  - Constructed tapered beam mechanical models to quantify forces and moments on the whiskers and resultant neural responses in the brain when rats sensed contact or airflow.
  - Predicted 4 categories of neural responses ($R^2 = 0.93$) from 420 sets of 100-ms data sampled at 10kHz.
  - Built predictive models for whisker geometry by whisker identity using data from > 500 rat whiskers.

EDUCATION

- **PhD**. Northwestern University *(Evanston, IL)* *09/2012 - 08/2018*
  - Mechanical Engineering
- **Certificate**. Kellogg School of Management *(Evanston, IL)* *06/2016 - 08/2016*
  - Management for Scientists and Engineers
- **BS**. National Taiwan University *(Taipei, Taiwan)* *09/2008 - 06/2012*
  - Mechanical Engineering