ANNE EN-TZU YANG

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

SKILLS

- **Languages**. Matlab, Python, SQL, LaTeX, HTML, JavaScript
- **Packages**. Pandas, Flask, Numpy, Scipy, scikit-learn, statsmodels, NLTK, psycopg2, BeautifulSoup, Prophet, PostgreSQL, SQLAlchemy, matplotlib, Google Developers Charts, Matlab regionprops, Matlab nftool
- **Tools**. Git, Github, Anaconda, Jupyter Notebook, Spyder, Azure (PostgreSQL DB, VM, NSG, blob storage), MS SQL Management Studio, AWS (RDS, EC2, Route 53), 3Dslicer, MeshLab

EXPERIENCE

- **Senior Data Scientist**. 3M *(Maplewood, MN)* *02/2020 - present*
  - Constructed a self-updating dashboard on Azure VM displaying the performance of a treatment planning algorithm, based on metrics extracted from the blob of each individual instance.
  - Implemented Natural Language Processing to inform Oral Care's responses to worldwide customer concerns amid a pandemic, as part of the Division's Covid-19 Task Force.
  - Communicated daily across R&D, software, manufacturing, data warehouse, etc.).
  - Led the first effort of historical data analyses on 3M's digital orthodontics patients.
  - Facilitated discussions with orthodontists, as both customer hearing and consultant's feedback for R&D).
- **Data Science Fellow**. Insight Data Science *(Remote)* *09/2019 - 10/2019*
  - Deployed an *html* web app recommending best time to ride Paris metro based on air quality prediction.
  - Utilized *Prophet* to predict hourly PM10 (pollutant) concentration, with an SMAPE error of 12%
  - Visualized results as *Google Charts* figures to provide intuitive information for health risks management.
- **Postdoctoral Researcher**. Inst. for Intelligent Systems and Robotics *(Paris, France)* *09/2018 - 08/2019*
  - Designed a system of markers to track 3D intraoperative surgical tools from individual 2D X-ray images.
  - Trained *convolutional neural networks* to successfully reconstruct deformable 3D shape and orientation at $\sim$ 10 ms/frame (errors $<1^\circ$) with medical (*DICOM*) images acquired from an operating room.
- **PhD Intern**. Sanofi *(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 visualization on 10k entries of clinical trial data.
- **PhD Candidate**. Northwestern University *(Evanston, IL)* *09/2012 - 08/2018*
  - Created a *MEMS*-sensor able to detect mechanical signals on a rat whisker of $<$200 μm diameter.
  - Initiated a multi-university collaboration that later won a $1M NSF grant.
  - Constructed static and dynamic models of tapered beams in *Matlab* and *Python* to quantify forces and moments on the whiskers when undergoing contact or airflow.
  - Predicted the time and scale of neural signals (R^2=0.93) from 420 sets of 100-ms data sampled at 10kHz.

EDUCATION

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