Jan Michael Cayabyab Austria

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Current Location: 109 Porcupine Circle, Salem, NH

Education

- **University of New Hampshire** — Durham, NH
  Master of Science in Data Science and Analytics; GPA: 4.00 — *May. 2019 – May. 2020*
  Project: Machine Learning Model of Zillow Housing Market; Python,R,sci-kitlearn
- **Tufts University** — Medford, MA
  Master of Science in Bioengineering; GPA: 4.0 (Withdrew) — *Aug. 2017 – Dec. 2018*
  Project: Process Improvements of ultrafiltration membranes, MATLAB
- **Cornell University** — Ithaca, NY
  Bachelor of Science in Biochemistry: GPA:3.1 — *Aug. 2009 – May. 2013*
  Thesis: Auqaporin Membrane Desalination Systems
  Awards: Dean's List (2012, 2013), Wyeth/Pfizer Student Scholarship (2009)

Skill Highlights

- **Programming Languages**: MATLAB, Python, R, JMP, SQL, SAS, Hadoop, Mapreduce
  Technologies:Microsoft Power BI and Office, Tableau
  Sectors: Data Analysis, Machine Learning, Deep Learning, Reinforcement Learning, Optimization, Biostatistics, Bioinformatics, Business Logic, Healthcare, Life Sciences, Manufacturing Production Operations

Experience

- **Lonza** — Portsmouth NH
  Project Manufacturing Engineer — *Jan.2019 – Mar.2019*
  - **Description**: Created cell culture and purification manufacturing documents and procedures to support new clinical manufacturing facility. Designed improvements to column chromatography operations, cleaning solvent systems, and bag mixing systems.
  - **Database Creation**: Created SQL databases to store in process manufacturing data specifications and in process parameters to increases efficiencies by 50 yo 75 percentage points allowing the company to allocate finances more adequately.
  - **Modeling**: Developed machine learning models to identify which engineering and manufacturing projects would have a higher probability of succeeding within the next six months. Model was used to narrow down scope and save company resources.
- **Pfizer** — Boston, MA
  Senior Associate Scientist — *Mar. 2018 – Jan. 2019*
  - **Classification**: Performed analytical characterization of candidate molecules by using biophysical and biochemical characterization techniques (NMR, HPLC, capillary gel electrophoresis, and iCE). Developed process improvements for drug product manufacturing culture and purification processes. Generated stability data for monoclonal antibodies and bi-specific molecules to be used in clinical trials to identify more successful candidate molecules.
  - **Analytics**: Developed dashboard to trend historical data to identify new potential molecules of interest. Authored reports and data visualization pertaining to complaints from pre-filled syringes.
  - **Modeling**: Used unsupervised learning techniques (TensorFlow, PyTorch, sci-kit learn) to identify patterns among monoclonal antibodies (bi-specific, tri-specific, etc). Model was deployed to classify incoming biologics to perform stability studies.
- **Pfizer** — Andover, MA
  Process Engineer — *Mar. 2016 – Mar. 2018*
  - **Production Operations**: Supported upstream (cell culture) and downstream (purification) manufacturing operations for Pfizer's portfolio of monoclonal antibodies and vaccines using CHO cells as the expression vector system for clinical and commercial campaigns.
  - **Continuous Improvements**: Trended data for processes to compare against other batches to identify manufacturing improvements. Tracked key performance indicators and created visualizations for metrics. Worked with management to increase efficiencies.
  - **Design Improvements**: Developed new impellors/agitators for 10000L centrifuge. Modeled flowrates and pressure curves using MATLAB scripts to optimize purification processes. Provided insight on scale up parameters of processes between research and development and manufacturing technology leads.
  - **Data Collection**: Updated SQL databases to record manufacturing in process data to be later evaluated by FDA agencies.

- **Analytics / Modeling**: Simulated various conditions for ultrafiltration membranes using MATLAB to identify performance issues and process optimization.

- **Pfizer** Andover, MA
  QC Scientist *Apr. 2015 – Mar. 2016*
  - **Testing**: Performed microbiological assays of clinical products, commercial products, raw materials, production intermediate samples, bulk samples, direct drug substance, and drug substance intermediate samples.
  - **Document Revision and Authoring**: Updated and revised standard operating procedures for scientists such that current methods would be reflected and were in FDA specification.
- **Dana Farber Cancer Institute** Boston, MA
  Research Associate *Apr. 2014 – Apr. 2015*
  - **Experimental**: Core research/administrator for blood and tissue banks processing whole blood, plasma, serum, and tissue for breast cancer analytics. Worked with surgeons and pathologists and created note taking system on patient breast tissue samples.
  - **Analytics**: Queried databases for clinical, histological, and pathological data regarding cancer types for principal investigators. Created and updated database systems to house more than 100,000 clinical trial patient's samples.
- **Columbia University Medical Center** New York, NY
  Research Associate, Systems Biology *May.2013 – Apr. 2014*
  - **Research and Analytics**: Performed drug discovery, bioinformatics, and compound synergy experiments. Used accelrys pipeline pilot to analyze data for heat-map construction. Used automation and liquid handling machines for planned cell based experiments in microplate format. Performed cell culture and maintenance of multiple primary cell lines from patients at the hospital. Used microscopy techniques to determine physiological properties of stained cells.

Poster Presentations

- **Columbia Genome Center High Throughput Screening Core Facility**: Andrea Califano, Christopher E. Henderson, Charles Karan, Hai Li, Sergey Pampou, Ronald Realubit, Jan Michael Austria. Columbia University Medical Center. New York State StemCell Science, Aug. 2014, New York, New York.
- **Affinity Chromatography Techniques used for downstream processing of transmembrane protein receptor 41BB to activate T Lymphocytes**: Erica Chin, Scott Houston, Jan Michael Austria, GE Tech Symposium, Medford MA, Jun. 2016.
- **Cell Line Development: CHO Cell Expression Systems**: Jan Michael Austria. GE Tech Symposium, Medford, MA. Jun. 2017.