# MOHAMAD ALAMSYAH

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## HIGHLIGHTED PROJECTS

**Dashboard of Research Payments in Healthcare in the United States 2023**          Sep 2024
- **Visualized ~400K records** of research payments in healthcare by Non-Covered Recipient Entity (NCRE) in the US **via Tableau connected to a database server in BigQuery**
- Extracted the data from OpenPayments CMS, cleaned the data from ParsingError, and **conducted data analysis** through **queries with BigQuery and Python**
- **Showcased relationships** of NCREs by state and city, along with **most-funded categories** of therapeutic areas, products, and NCREs, **and filters** of Top N, Product Category, and Smart Search

**Product Segmentation and Customer Classification of Online Retail Transactions**     Aug - Sep 2024
- **Cleaned 1,000,000+ data** of 2 years worth of transactions in an online retail company into **760K+ invoices**, with cancellations cleaned from rows into a column for easier revenue calculation
- **Clustered** the data using KMeans for marketing purposes into **6 categories of products and 11 categories of customers,** with visualizations of WordCloud for contents of product, PCA for both clusters' correlations, and RadarChart for customer morphotypes, and horizontal stacked bar chart for transactions per category in 40+ countries
- **Classified customers** with machine learning of 3 models inside a **VotingClassifier** with an accuracy score of **91.5389%**

**Drug Reviews Dashboard and Sentiment Analysis, drugs.com**          May - Jul 2024
- **Cleaned 390,000+ data** of intake time, format of drug reviews, and mainly mixed up formats of drug brand names, usage, and generic names into 250,000+ data in addition of making a PostgreSQL database from creating the table, writing queries for data analysis, up to granting privileges to users
- **Created a dashboard of drug reviews** (16 years of real-world data) as a customer-based reference via Tableau, featuring a bubble chart of drug usages, ranks of drug brands, and top reviews by likes
- Applied **sentiment prediction using 4 deep learning algorithms** with a best accuracy of **80,98 %**

## CERTIFICATIONS & RELEVANT COURSEWORK

**Udacity: A/B Testing - Commitment Check for Enrolled Users**          Aug 2024
- **Created an experiment design** towards a change in the website after clicking "Start Free Trial" at Udacity to filter out frustrated students while retaining paid users
- **Conducted experiment analysis** towards the data and chosen metrics of gross conversion and net conversion with statistical methods of  sanity checks, practical and statistical significance check, sign tests, and **proposed recommendations and suggestions from the insights**

**Pfizer UK: Molecule to Market - Virtual Experience Program on Forage**          Jun - Jul 2024
- Completed a job simulation focused on launching a hypothetical new medicine of **Diahartanone, a diabetic cardiomyopathy** prescription-only drug with **pyridoxamine and extracts of *Moringa oleifera*** to alleviate myocardial stiffness and atherosclerosis while preventing formation of AGEs
- Identified the clinical care pathway and **prepared evidence to submit to the National Institute of Healthcare and Excellence (NICE)**, created a brand positioning statement and presented a pitch for the new medicine, and researched the needs of specific patient and customer types and created an effective go-to-market strategy

**Dataquest.io: Data Scientist in Python**          Nov 2023 - Mar 2024
- Learned data analysis with Python, data visualization with Python and Tableau, working with data sources using SQL, data probability and statistics, APIs and web scraping, machine learning, and deep learning in TensorFlow, while working on projects end-to-end for hands-on experience
- **Notable projects on remark:** Detecting Pneumonia in X-Ray Images (CNN), Classifying Real and Fake Disaster Tweets (NLP), and Credit Card Customer Segmentation (K-Means for A/B Testing)

## TECHNICAL SKILLS

- **Programming Languages and Tools :** Python, PostgreSQL, Tableau, dbt, BigQuery, Excel
- **Libraries :** Pandas, NumPy, Matplotlib, seaborn, scikit-learn, scikit-lego, Keras, TensorFlow, PyTorch, transformers, psycopg2, NLTK, requests, selenium, BeautifulSoup4
- **Languages**: Indonesian (Native), English (Fluent), German (B1) and Italian (A1)

## EDUCATION

**Bandung Institute of Technology (ITB)**                                                  Aug 2018 - Nov 2023
Bachelor Science of Biomedical Engineering                                         Bandung, Indonesia
- **Took 149 credits** ranging from biomedical, life sciences, up to strategy and management courses. Notable ones included: Healthcare Management and Assessment of Technology, Biomedical System Design, Cell Therapy and Tissue Engineering, Financial Planning, Probability and Biostatistics
- **Joined several organizations:** Ganesha Model United Nations Club (GMUNC), South Celebes Unit of Arts (UKSS), and Electrical Engineering Student Association (HME ITB), National Youth Summit for Renewable Energy (NYSRE) 2020, Edufair Palu
- **Thesis Project:** Development Of Multi-Analyte Biosensor based on Screen-Printed Carbon Electrode (SPCE) Modified With Graphene Oxide and Gold Nanoparticles (GO-AuNP)

## EXPERIENCE

**Study Review on CAR-T Cell Therapy: Axicabtagene Ciloleucel**                           May 2023
- Conducted a study review in collaboration with Biology students of ITB on a biotechnology product of CAR-T Cell Therapy: **Yescarta™ (Axi-Cel) for Diffuse Large B-Cell Lymphoma (DLBCL)**
- Reviewed characteristics and biomarkers of DLBCL, and properties of CAR-T: pharmacological characteristics, mechanism of action, process of production, and latest updates.of the product

**Automatic Needle Burner for Medical Waste Management**                         Jan 2021 - Dec 2021
- **Built a medical device directed to COVID-19 medical workers** in collaboration with Mechanical Engineering students of ITB (conducted in hybrid schedules with monthly progress reports)
- Mapped specifications, constraints, and design alternatives for the prototype, made **diagrams of Model-Based Systems Engineering (MBSE)** referring to the subsystems of design, and lastly implemented testing and troubleshooting for development of the prototype
- Created a portable needle burner capable of **burning the tip, detaching the hub, and putting the detached piece into the storage in under five seconds** for medical waste management

**Blueprint: Building an Imaging Hospital in Indonesia**                              Aug 2021 - Dec 2021
- Constructed a draft proposal of **an imaging hospital** in Indonesia mainly **referring to regulatory requirements** from Indonesia's Ministry of Health
- **Provided necessary components of hospital into account**, such as medical equipment for several areas in anatomy, information systems in medical imaging, main human resources, up to budgeting and digitally-mapped interior design
- Calculated a budget analysis to cover the needs for hospital with an estimated total of **IDR 24.712B**

**Health Technology Entrepreneurship – Mental Health Apps for College Students**    Aug - Dec 2021
- Led and developed a business plan in healthcare technology of *Something*: **a SaaS platform for mental health aimed at college students in Bandung City** by incorporating features such as medical counseling, daily questions, reminders, and gathering of communities with mutual struggle.
- Defined milestones, financial forecasts, and partnerships referred to business model and value proposition canvas, estimating a reach of ~**100,000+ college students in Indonesia in 5 years with a profit generation of IDR 2,989B**
- **Presented the final pitch** together with an app demonstration to Biomedical Engineering students of ITB and Medicine students of UNAIR (Airlangga University) for feedback in medical perspective.