Azuka Atum

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Portfolio · GitHub · LinkedIn ·

SKILLS

Languages and Tools: R, SAS, SQL, basic command line interface (CLI), Microsoft Office Suite (Word, Excel, Powerpoint, Outlook, OneNote, Teams), Google G Suite, Git (github, gitlab, git bash), Database Management Systems (MySQL, Oracle), Unix/Unix-like systems (macOS terminal), Adobe Illustrator, QualtricsXM, ObsidianMD

Statistical Analysis: Report writing (Markdown, Quarto, LaTeX), math skills (statistics/statistical modeling/statistical analysis, Survival Analysis (Kaplan-Meier, Cox Proportional-Hazards, AFT Models), ANOVA, Regression Analysis (linear, logistic, categorical), data visualization

Communication: Presenting data insights to non-technical stakeholders, blogging, graphic design

Research Skills and Interests: Applying biostatistics methods to clinical research, survival models, machine learning with survival models, R Shiny, communicating statistical analysis through visualization, clinical trials, Database Research (NHANES, PubMed), Hypothesis testing

EDUCATION

California State University, East Bay   **Hayward, CA**
Master of Science: Biostatistics   **May 2023**
- **Center for Student Research (CSR) Scholarship** (2022-2023): scholarship funding to engage in professional development sessions designed to develop broader academic and professional skills.
- **Selected Coursework**: Probability and Statistical Theory, Regression analysis (Linear/Logistic Regression in SAS and R), Clinical Trials in the Biomedical/biotech Industry, Survival Analysis, Categorical Data Analysis, Applied Deep Learning (tensorflow in R), R for Data Science, Applied Research (AI/artificial intelligence, machine learning)

San Francisco State University   **San Francisco, CA**
Bachelor of Science: Microbiology   **May 2019**
Capstone: The Effect of Sugary Drinks on the Growth Rate of Cutaneous Staphylococcus sp.
- **National Institutes of Health: SFBUILD** (2018-2019): a competitive scholarship and internship for research.
- **College of Science and Engineering (CoSE) Student Project Showcase** (2018): presented capstone project at university symposium.
- **Selected Coursework**: Microbiology lab (genetic engineering, bacterial isolation), Designing Clinical Research (graduate course), Computational Statistics, Computational Biology

SELECTED PRESENTATIONS AND WORKS

- Paper: Miguel Guardado, Dara Torgerson, Cheryl Chapin, **Azuka Atum**, Ryan D. Hernandez, B Ronald, Rebecca Simmons, Samuel Parry, Philip L. Ballard. *Urinary acetaminophen metabolites and clinical outcomes in premature infants.*

- Poster: **Atum, A**. BS, Hennessy, S. PhD, Bsc (Hons), et. al. *Projected Reduction in Incident Cardiovascular Death from Increasing Fruit And Vegetable Intake in the United States.* 2022. Poster presented at: AHA EPI|Lifestyle Scientific Sessions; March 1-4, 2022; Chicago, IL.

- Presentation: **Atum, A.** M.S., Velasquez, A. MS. *Study Design*. August 2nd, 2022. Day 2 Session of Clinical Research Coordinators: Learners for Equity (CIRCLE) program at UCSF; San Francisco, CA (online).

- Poster: Gaitan, Leeza, Jackson, Eric, **Atum, Azuka**, Marquez-Magaña, Leticia, Ph.D. 2018. "The Effect of Environmental Change on Salivary Cortisol Concentration as an Indicator of Stress in SFBUILD Scholars". Poster Presented at: SFBUILD Student Showcase.

- Poster: **Atum, A.**, Dennis, S. 2018. "The Effect of Sugary Drinks on the Growth Rate of Cutaneous Staphylococcus sp." Poster presenteed at: 20th Annual SFSU College of Science and Engineering (CoSE) Student Project Showcase.

PROFESSIONAL EXPERIENCE

KAISER PERMANENTE   **Oakland, CA**
Division of Research
Data Reporting and Analytics Consultant II   **Feb 2024 - present**
- Utilized SAS and Oracle SQL within the KPRB Data and Analytic Platform (KDAP) for comprehensive analysis and management of survey, genomic, environmental, clinical (EHR), and biospecimen data from the Kaiser Permanente Biobank, creating de-identified datasets that drove epidemiological research and provided actionable insights to stakeholders.
- Leveraged advanced computing infrastructure and DBMS to streamline data retrieval and analysis, ensuring data integrity and operational efficiency through detailed documentation of methodologies and workflows.

- Enhanced research capabilities by developing and maintaining essential, compliant research resources, promoting a culture of collaboration and facilitating research into health and diseases by providing comprehensive datasets and analytical files.

University of California, San Francisco   San Francisco, CA
Department of Epidemiology and Biostatistics
Research Data Analyst II / Biostatistician   **Mar 2023 - Feb 2024**

- Analyzing xenobiotics, pharmaceutical and genomics data for impact of pharmaceutical metabolites on pre-term infants with broncho-pulmonary dysplasia.
- Creating detailed summary reports and analyses in R for respiratory samples collected from infants and children with broncho-pulmonary dysplasia.
- Assisting in research project linking gut microbiota to metabolites found in blood using MiME database.
- Effectively communicated findings and ongoing activities during lab meetings, fostering collaboration and informed decision-making within the research team.
- Staying abreast of new research in the field of genomics, biostatistics, and microbiology research.

Administrative Assistant   **Feb 2020 - Aug 2022**

- Led multi-year report writing assignments from each year providing a succinct and generalized summary of data insights gathered from participants which administrators later used to help improve the program.
- Corresponded with scholars and program administrators using scheduling tools such as WhenIsGood and Outlook.
- Collaborated with program administrators to suggest improvements to the CIRCLE program such as data collection improvement with QualtricsXM, outreach on diverse social platforms, and developing promotional materials like program logo and flier.
- Teaching assistant and lecturer for clinical research coordinator Study Design course.

Research Data Analyst I   **Dec 2019 - Aug 2022**

- Modeled using SAS to analyze NHANES (national health and nutrition examination survey) and BRFSS (behavioral risk factor surveillance system) data to project the incidence and preventive impact of increased fruit and vegetable intake on cardiovascular health, estimating a prevention of 98,000 cardiovascular diseases and 16,000 deaths over a decade among U.S. adults aged 35-94, offering valuable insights that could influence dietary and health policies.
- Co-authored abstract in Circulation and presented a poster at the AHA EPI|Lifestyle Scientific Sessions 2022, disseminating key findings on dietary impact on cardiovascular health, highlighting potential substantial health benefits particularly among hypertensive populations.

Project Policy Analyst I   **Aug 2019 - Dec 2019**

- Collected input data for nutrition as a risk factor for hypertension and cardiovascular disease for the CVD (cardiovascular disease) policy model.
- Worked with other researchers, analysts, and post-doctoral scholars on projecting incidence of heart disease in various groups in the U.S. using common heart disease risk factors integrated into the CVD policy model.
- Acquired training in statistical programming languages such as SAS, R.

Undergraduate Research Scholar   **Jan 2019 - May 2019**

- Collected input data for cardiovascular disease policy model using nutrition as a risk factor.

San Francisco State Universty   San Francisco, CA
College of Science and Engineering (CoSE)
Undergraduate Research Scholar   **Jun 2018 - May 2019**

- Co-designed experimental methodology that studied the effects of the environment on the stress levels of 14 SFBUILD undergraduate scholars teaching at the Latino Cultural Center in Richmond, CA.
- Received faculty mentoring and training in biomedical research using SAS at UCSF on research project modeling the effect of diet on cardiovascular disease by reducing hypertension.

PORTFOLIO PROJECTS

Fixed-Effect Analysis of Baseline Serum Creatinine across Sex and Blood Pressure   **Sept 2023 - Oct 2023**

- **Focus**: Is there an observable difference in baseline creatinine levels and blood pressure between sexes?
- **Outcome**: There is a difference in baseline creatinine across sexes, and it is statistically significant. On average, **women were over 20 μmol/L lower compared to men in the dataset**. There was no effect of blood pressure on serum creatinine.
- Corresponding SAS code and presentation.

Survival Analysis: Unraveling Factors in Post-Transplant Disease
Apr 2023 - May 2023

- **Focus**: Investigated factors affecting the time to chronic graft-versus-host disease (CGVHD) in leukemia patients who received allogeneic bone marrow transplants.
- **Outcome**: Results showed varying impacts, with St. Vincent patients experiencing a **35% longer time to CGVHD** and Alfred patients experiencing a **10.3% shorter time**.
  - Male patients had a **14% longer time** compared to females, and each one-year increase in age led to a **0.3% longer time**.
  - Disease group also **influenced CGVHD time by 15.2%**. **All covariates were statistically insignificant**, suggesting limited roles in CGVHD development.
- Corresponding SAS code.

Forecasting Wins and Losses with Machine Learning
Sep 2022 - Dec 2022

- **Focus**: Forecasted 82-game wins and losses scores with linear discriminant analysis trained on Lakers' 73- game regular season data from the 2019-2020 season using games played, team score, and opponent score as predictors.
- **Outcome**: From the simulation, had the Lakers played all 82 games, they would have **won 55 games, and lost 27, with a final win percentage of 67% and a loss percentage of 33%.**
- Corresponding R-code and presentation.

Tall People and Risk of Cardiovascular Disease
Apr 2023 - May 2023

- **Focus**: Analyzed 68,783 by 12-dimension Kaggle clinic dataset for relationship between height and risk of CVD;
- **Outcome**: Given the data, **the probability of having CVD given you are tall is 0.47.**
- Corresponding SAS code and presentation.

Regression Analysis of the Lakers' Regular Season
Mar 2022 - May 2022

- **Focus**: Developed a linear model using R to predict points per game performance during the 82-game regular season with a 21 by 23 dimensioned dataset from basketball-reference and nba.com.
- **Outcome**: **86% of the variation in the data is explained by the model.**
- Corresponding R code and presentation.

Improving Diet to Prevent Cardiovascular Disease
Jan 2019 - Jan 2022

- **Focus**: Used simulation modeling to estimate the impact of increased fruit and vegetable intake in the population who currently consume low amounts on subsequent incident cardiovascular disease and death.
- **Outcome**: Results show that **increasing fruit and vegetable intake by one cup equivalent per day is estimated to prevent 98,000 incident CVD and 16,000 CVD deaths over 10 years, particularly for those with existing hypertension.**
- Corresponding abstract and poster.

The Effect of Sugary Drinks on the Growth Rate of Cutaneous Staphylococcus sp.
Jan 2018 - May 2018

- **Focus**: A study on the effects of three sugary drinks (diet coke, coke, apple juice) on the growth rate of *Staphylococcus sp.* bacterial species.
- **Outcome**: By measuring turbidity over a period of time in different concentrations of growth media, we found that:
  - Diet coke had the **second lowest overall generation time** across concentrations compared to coke which was the lowest, and apple juice which had the highest.
  - The **fastest generation time** observed was **7% concentration coke at 11.5 minutes**.
  - The solution with **the slowest generation time** not including control **was 3% apple juice at 29 minutes** for generation time.
- Corresponding poster.

LEADERSHIP, VOLUNTEERING, AND COMMUNITY SERVICE

Los Medanos College
Pittsburg, CA
American Medical Student Association
Vice President
Aug 2015 - May 2016

- Coordinated medical professional guest speakers for career development for members.
- Helped to raise over $1,000 in fundraisers on campus geared towards Leukemia and Lymphoma awareness.
- Worked with the EMT department to provide free CPR AED classes to AMSA members.
- Won Outstanding Club of the Year award for 2015-2016 Fall/Spring semester.

KAISER PERMANENTE
Antioch, CA
Volunteer
Jul 2015 - Feb 2017

- Providing assistance to care providers such as nurses or other personnel by discharging members from any area in the hospital using wheelchairs.
- Helped Kaiser members navigate hospital campuses with ease using appointment lookups with medical record numbers.

- Respected protected health information by maintaining HIPAA compliance.
- Maintained hygienic standards with sanitizing policies consistent with reducing spread of nosocomial infections in the hospital such as stocking medical-grade wipes, medical- grade disinfectant, and proper glove disposal.
- Amassed over 200 hours of volunteer work.

PROFESSIONAL MEMBERSHIPS AND CONFERENCES

American Statistical Association   **August 2021 - Present**
- Conference on Statistical Practice (Feb 2023)
- Joint Statistical Meetings (Aug 2023)

American Heart Association   **August 2020 - Present**
- Presented accepted abstract/poster at AHA EPI|Lifestyle Scientific Sessions March 2022.

College of Science and Engineering (CoSE)   **May 2018**
- Presented capstone research project at SFSU student showcase.

R for Data Science Book Club   **May 2023 - Present**
International Statistical Engineering Association   **Nov 2023 - Present**
Society for Clinical Trials   **Nov 2023 - Present**