

Pavina Sengkhayavong

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SUMMARY

Detail-oriented systems developer with 8+ years of experience in developing and optimizing intricate data systems using SAS, Shell Scripting, and Perl to support large-scale data projects. Skilled in performing verification/validation and streamlining data processing tasks to maintain data integrity and ensure efficient operations under tight deadlines. A fast learner who is continuously building on a strong foundation of Python, SQL, and AWS, with an emphasis on data engineering.

SKILLS

Programming Languages: SAS · Python · SQL · Shell Scripting · Perl

Data & Cloud Technologies: AWS · Linux · PostgreSQL · dbt

Development Tools: GitLab · Subversion · Agile

WORK EXPERIENCE

Systems Developer

June 2017 – Present

Gunnison Consulting Group, Fairfax, VA

Client: U.S. Census Bureau

- Developed an **ETL pipeline** to extract data from large SAS datasets and load them into a PostgreSQL database for downstream analytics.
- Migrate SAS-based data systems to Python and integrate PostgreSQL and Parquet for data storage to **improve system performance, scalability, and costs** as part of the Census Bureau's **modernization efforts**.
- **Maintain and troubleshoot complex systems** (SAS, Korn Shell, Perl) to ensure the accurate production of over 7.5 billion estimates for the annual release of the Census Bureau's American Community Survey (ACS) Data Products.
- Implement **disclosure avoidance techniques**, including differential privacy and Discrete Gaussian Mechanism (DGM), in accordance with specifications to ensure **data privacy compliance**.
- Create ACS custom tabulations based on customer requirements, delivering tailored estimates not publicly available to **support data-driven decisions and analysis**.
- Designed and developed a **robust verification system** to identify and report issues in geography metadata files to avoid delays in downstream processing.
- Improved ACS Quality System performance by 96% through **parallel processing and algorithm optimization**.
- Developed a Python program to split 10 SAS datasets into 26,000+ individual rich-text Excel files for public dissemination, **reducing processing time** from several days to 30 minutes.
- Optimized Perl scripts to monitor tabulation jobs on the Linux server, collecting performance metrics (run time, CPU, memory usage) to **enhance system monitoring**.
- Authored **comprehensive system documentation** and conducted training sessions to increase user proficiency with complex systems.

EDUCATION

University of Virginia, Charlottesville, VA

August 2013 – May 2017

Bachelor of Arts in Economics, Finance Concentration

Bachelor of Arts in Statistics, Econometrics Concentration

CERTIFICATIONS

- AWS Certified Data Engineer Associate, *Amazon Web Services (AWS)* February 2025
- Certified Scrum Master (CSM), *Scrum Alliance* September 2021
- Certified Associate in Python Programming (PCAP), *Python Institute* July 2021