

Pavina Sengkhayavong

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SUMMARY

Detail-oriented systems developer with 7+ 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, R, Perl
- **Cloud Technologies:** AWS
- **Other Tools:** PostgreSQL, GitLab, Subversion, Jira
- **Technical Writing:** Standard operating procedures, system user guides

WORK EXPERIENCE

Systems Developer

June 2017 – Present

Gunnison Consulting Group, Fairfax, VA

- 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