

# Daniel P. Manchester

---

Arlington, Virginia • [dpmanchester@gmail.com](mailto:dpmanchester@gmail.com) • [dmanchester.com](http://dmanchester.com) • [in dpmanchester](https://www.linkedin.com/in/dpmanchester)

## Profile

Detail-oriented software engineer skilled at building applications and infrastructure for a global user base. Adept at supporting production systems and solving hard problems. Experienced in natural language processing, and in working with geospatial and aviation data.

Strong written and verbal communicator. Open-source developer.

## Technical Expertise

### Languages

- JavaScript, TypeScript
- Scala
- Java
- Bash

### Runtime Environments

- Node.js
- Apache Tomcat

### Application Frameworks

- Svelte
- Play Framework

### Other Application Technologies

- Relational databases, SQL
- REST web services
- PKI, SSL/TLS
- Unicode, ICU4J
- CesiumJS

### Development and Testing Tools

- Git, GitHub
- VS Code, IntelliJ IDEA
- Jasmine, JUnit, specs2
- Jenkins, Artifactory
- sbt

### Linux Distributions

- Rocky Linux/  
Red Hat Enterprise Linux
- Fedora
- Ubuntu

### Amazon Web Services

- EC2
- S3
- CloudFormation
- CloudWatch

### Other Services

- Elasticsearch
- Microsoft Translator/  
Azure AI Translator

## Experience

### Leidos/Lockheed Martin Corporation

January 2007–Present

*Leidos merged with Lockheed Martin's IT services business in August 2016.*

Support the U.S. Government as a **software engineer** (Leidos)/**software engineer staff** (Lockheed Martin) by developing and maintaining systems for natural language processing (NLP). Experience with machine translation, transliteration, optical character recognition (OCR), and transcription.

Recent contributions around **developing software and integrating with off-the-shelf technologies**:

- Updated system's integration with its core commercial off-the-shelf software (COTS) for machine translation, accommodating upgraded COTS version and API changes. Fixed bugs in that integration, increased its robustness, and improved its documentation. Coordinated COTS vendor's roll-out of upgrade with deployment of corresponding system changes.

**Experience**  
(continued)

- Designed Elasticsearch-based replacement for application's metrics subsystem. Created a flexible schema, introduced a type-safe API for accessing it, and migrated code base to that API. Using Kibana, demonstrated subsystem's usefulness for real-time analytics and historical visualizations.
- Restarted effort to upgrade software component for manipulating and converting documents. Identified the specific regressions that had previously stalled the effort and determined preferable version of component to target. Developed wrapper to work around remaining regression, manage concurrent invocations, and handle Linux signals.

Recent contributions around **supporting production operations, users, and other stakeholders:**

- Investigated application bug leading to data loss and user dissatisfaction. Discovered usage pattern to re-create bug. Traced root cause to a race condition between lookup of network connections' properties and connection teardown. Developed fix.
- Analyzed intermittent, hard-to-reproduce system problems. In one case, traced the problems to reboots of certain servers and weaknesses in servers' health checks. In another, identified third-party library's data-structure reuse and lack of thread safety as the cause. Developed workarounds to avoid the problems where possible and retry failing operations where necessary.
- In preparation for COTS's transition to usage-based pricing, developed scripts via AI code generation to gather telemetry data from pool of servers and estimate historical use. Produced summaries for senior stakeholder.
- Engaged with partner teams wanting to integrate with system's REST API. Counseled them on development approaches, authentication, and input batching. Facilitated production cutover and scale-up of their integrations, measuring performance and monitoring system for impacts.

Recent contributions around **building and maintaining infrastructure:**

- Helped maintain system infrastructure encompassing diverse EC2 instances and other AWS technologies. Replaced system components regularly, rolling out changes and patches with no downtime. Migrated hand-created infrastructure to CloudFormation, avoiding configuration drift and lessening risks to system operations. Created CloudWatch metrics and alarms to improve visibility into system health.
- Drew up plan for migrating away from end-of-life server operating system; accounted for customer's current technologies and practices, lack of automated upgrade path, and compressed schedule. Coordinated teammates' execution of the plan with efforts of two collaborator teams. Oversaw smooth cutover to new servers.
- Consolidated over 30 Git repositories while retaining file history and moved their contents to on-premise GitHub deployment. Simplified team's Jenkins jobs, increased their reliability, and brought them under source control. Designed approach for provisioning infrastructure from Jenkins while managing credentials securely.

---

<b>Experience</b> (continued)	<b>CGI Inc./American Management Systems, Inc.</b> <span style="float: right;"><i>August 1997–December 2006</i></span> <i>CGI acquired American Management Systems in May 2004.</i> Completed software releases and implementation projects for a range of clients. Attained titles of <b>principal</b> and <b>senior consultant</b> .  As <b>technical lead</b> , led discussions with clients to refine software requirements. Wrote functional specifications and other deliverables. Planned development efforts, defining tasks and preparing time and cost estimates. Assigned tasks to developers and assisted them in completing their work, reviewing their technical designs and code. Adjusted plan and staffing as necessary to ensure timely release of software.  As <b>project manager</b> , planned implementation projects, creating statements of work and project plans. Assigned duties to team members and oversaw their work. Monitored progress and reported status to management. Led assessments of project risks and creation of mitigation strategies. Exceeded financial goals.  As <b>software developer</b> , created technical designs based on functional specifications. Programmed front-end functionality and server-side processing. Wrote and executed unit tests. Fixed legacy software issues. Contributed common services to application frameworks.
<b>Open-Source Activities</b>	Building <a href="#">ApproachMinder</a> , a proof of concept for detecting incorrectly flown aircraft approaches in real time. Addressed challenges around parsing and correlating ADS-B data, re-projecting coordinates to facilitate distance and angle calculations, identifying approaches and landings and summarizing them via statistical models, matching trajectories to models, and quantifying trajectory deviations.  Developed <a href="#">PlayFOP</a> , a library for generating PDFs, images, and other types of output in Play Framework applications. Created sample applications, a user guide, and a live demonstration.
<b>Education</b>	<b>Rice University</b> , Houston, Texas B.S. in Mechanical Engineering, B.A. in German Studies <ul style="list-style-type: none"><li>● Graduated <i>cum laude</i>.</li><li>● Inducted into Tau Beta Pi, The Engineering Honor Society.</li><li>● Studied for one year in Germany at the Technische Universität Berlin. Took courses in mechanical engineering, applied mathematics, and literature.</li></ul>
<b>Other Qualifications</b>	Fluent in written and spoken German.