# Mark Cloutier

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mainstringargs.github.io

Full Stack Software Engineer with a passion for implementing complex software solutions in intuitive, agile ways using my skills as a leader, technology enthusiast, and software developer.

## EXPERIENCE OVERVIEW

Co-creator and primary developer of Panopticon Geospatial Integration and Visualization framework. Panopticon is (and has been) used in dozens of pursuits and projects encompassing all Lockheed Martin business units. Received recognition and awards for plugin based integration enabling composite control and display in a common interface. Applied for and awarded "Destination Innovation" exploratory funding to improve the Panopticon framework on multiple occasions.

Developed many plugins for Panopticon, including plugins that interface with Twitter to show geospatial-enabled tweets, a plugin that leverages Lucene to build a geospatial search engine, and a plugin that feeds civil air track data to a Python based streaming machine learning model. Developed experimental Panopticon Web concept that enables common plugins for use in Web Browser using Worldwind Explorer.

Lead of Track Database project which is a key part of Australian Rail Track Corporation (ARTC) Advanced Train Management System (ATMS). Track Database ingests surveyed feature data and produces element views used by all of the components of the system.

Software Engineer on various C2 (Command and Control) projects and products. Language experience spans Java, Ada, C, C++, Python, and Node.js. Aspects focused on include CAL/UCI integration, enabling and re-architecting simulators to work in Kubernetes, and exposing data from legacy systems.

Selected into Lockheed Martin's ELDP (Engineering Leadership Development Program) in May 2009 and graduated from the program in August 2012. The ELDP program is rotation based and includes a systems engineering focused Technical Development Curriculum given via the Stevens Institute of Technology, based in New Jersey.

## EDUCATION

### University of Minnesota, Minneapolis, MN— *Master of Science in Software Engineering*

Graduated May, 2012

Graduate program focused on hands-on and team based Software Engineering.

### University of Wisconsin - Stout, Menomonie, WI — *Applied Math & Computer Science*

Graduated May, 2008

Major Concentration: Software Development

Minor: Business Administration

Minor: Information and Communication Technology

## SKILLS

Full Stack Engineer with experience in many languages, frameworks, and technologies:

Java

Python

Docker/Kubernetes/Helm

Kafka/DDS/ActiveMQ

MATLAB

Git/Mercurial/SVN

REST/SOAP/IDL

Jenkins/Gitlab CI

JIRA/Confluence/Crucible

## ACHIEVEMENTS

Lockheed Martin NextGen Spotlight Award (2021)

Lockheed Martin NextGen Silver Award (2020)

Lockheed Martin Destination Innovation Program (2015, 2017, 2020)

Lockheed Martin Service Recognition Award (2013)

Graduate of Lockheed Martin Engineering Leadership Development Program (2012)

Lockheed Martin SPOT Award (2009, 2012, 2014, 2016)

## Lockheed Martin RMS – Remote in Eagan, MN (Reporting to Littleton, CO)

**Software Engineer Staff: May 2017 – Present**

Panopticon Lead Developer

- Demonstrate and tutor Panopticon technologies to various teams throughout the corporation.
- Add RESTful interfaces and JSON data format for exporting/importing data.
- Implementation of Web Based interface using Worldwind Explorer.
- Creation of Node.js and Express based demonstration and development portals.

Advanced Train Management System (ATMS) – Track Database Lead

- Establishment of Track Database for testing capacity of system.
- Ticket lifecycle management and implementation of software related changes.
- Manage documentation related to Track Database.

5th Gen IRAD Developer

- Develop Extensions for Raytheon Solipsys MSCT Product.
- Create containers for microservices and simulators.  Use Skaffold and Helm to deploy and configure for Istio and Kubernetes.
- Develop solutions for publishing and subscribing data through security levels.

## Lockheed Martin MST/RMS – San Diego, CA

**Software Engineer Senior: October 2012 – May 2017**

Panopticon Developer

- Establish build infrastructure for Project using Maven, Ant, Eclipse, and Jenkins.
- Develop plugin framework and universal geospatial data model for WorldWind SDK to display geospatial data and provide interaction with various back ends.
- Demonstration of plugin framework with back ends and technologies such as Twitter, Lucene, and ADS-B flight data.
- Created Panopticon Visualization Plugin for DARPA Tactical Undersea Network Architecture (TUNA) Phase 1 Submission.

Command & Control Software

- Java, Ada, C, and C++ based technologies for tracking, processing, and displaying planning and tactical information. Implemented failover (primary/backup) solution for legacy Oracle database using WSDL and Java.
- Implemented site switchover (active/standby) solution using IDL DDS and Java.

Advanced Train Management System (ATMS) – Track Database Lead

- Track Database uses Matlab, Kettle, DB2, and Java to produce static views of track related data which are used by all elements of the system.
- Lead team of 3-5 engineers to track status, create tickets, implementation, peer review, and verification.

Advanced Train Management System (ATMS) – Driver Machine Interface

- Implement XML based configuration for controlling visualization aspects related to various areas of track.
- Fixed hundreds of defective unit tests for repeatability and coverage using JMockIt and JUnit.

## Lockheed Martin MS2/MST – Eagan, MN

**Software Engineer ELDP: June 2009 – October 2012**

**Software Engineer Associate: June 2008 – June 2009**

Command & Control Software

- Develop framework for database entity access for services using OSGi, Hibernate and Spring.
- Creation of IDL based integration point using DDS publish/subscribe mechanism for data distribution.
- Implementation of SOAP (JAX-WS) based interfaces that allow clients to interact with the system via JNA facade.