

SIT 725

Applied Software Engineering

Task 5.2C

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Project Structure:

```
UAV_Analysis_Platform/
├── server.js           # Main application entry point
├── package.json        # Dependencies and project configuration
├── config/
│   └── database.js     # Database connection configuration
├── controllers/        # Controller Layer (MVC)
│   ├── AuthController.js # Authentication logic
│   └── FlightController.js # Flight data operations
├── models/             # Model Layer (MVC)
│   ├── User.js         # User data model
│   ├── FlightData.js   # Flight data model
│   └── UAVDataProcessor.js # Business logic
├── views/              # View Layer (MVC)
│   └── index.html      # Main user interface
├── public/             # Static assets for View
│   ├── css/
│   │   └── styles.css  # Styling
│   └── js/
│       └── scripts.js  # Client-side logic
├── routes/
│   ├── auth.js         # Authentication routes
│   └── flights.js       # Flight data routes
└── middleware/
    └── auth.js          # Authentication middleware
```

Repository link:

[SIT725/Task 5.2C/UAV_Analysis_Platform at main · JudsonJia/SIT725](#)

Screenshot:

```
PS C:\Users\51539\Desktop\Deakin HD T2 Homework\SIT725 - Applied Software Engineering\Task 5.2C\UAV_Analysis_Platform> node server.js
UAV Performance Analysis Platform (MVC) listening on port 3000
Server started at: 2025-08-13T10:27:57.615Z
Environment: development

Available endpoints:
GET / - Main application
POST /api/auth/register - User registration
POST /api/auth/login - User login
GET /api/auth/profile - Get user profile
PUT /api/auth/profile - Update user profile
POST /api/flights/upload - Upload UAV flight data
GET /api/flights - Get user's flight history
GET /api/flights/:id - Get specific flight analysis
GET /api/flights/:id/visualization - Get 3D visualization data
GET /api/flights/:id/report - Generate flight report
DELETE /api/flights/:id - Delete flight data
GET /api/health - Health check
MongoDB Connected: localhost
```

UAV Performance Analysis & Visualization Platform

Comprehensive analysis tools for MEC-enabled autonomous UAV delivery systems, helping researchers understand network degradation impact on UAV flight performance



▶ START ANALYSIS

Opens demonstration modal with platform features overview

Platform Core Features

Data Processing

Advanced UAV flight data processing with real-time validation and error detection capabilities.

Network Analysis

Comprehensive network quality assessment and correlation with flight performance metrics.

3D Visualization

Interactive 3D trajectory visualization with network overlays and error indicators.



Experimental Data Upload

Upload your UAV flight data for network degradation analysis

CHOOSE FILES supports .csv, .json, .txt formats

Maximum file size: 50MB. JSON format preferred for optimal processing.

▶ START ANALYSIS

Real-time Analysis Dashboard

Network Quality

Signal Strength: 70%

Flight Accuracy

Positioning Error: 15cm

3D Flight Trajectory Visualization



Interactive 3D trajectory visualization will be displayed here

LOAD 3D VIEW