**Capstone Proposal**

**Title:** Mapping the Missing: A Data Analysis of Missing Persons in Tennessee and the U.S

**Student / Program:** Abigail Spence, Nashville Software School — Data Analytics

**1) Project Overview**

Behind every missing person statistic is a family waiting for answers and a community left with uncertainty. This project goes beyond numbers — it is about recognizing the human weight of these cases while using data to bring clarity where there is often confusion

This project will analyze missing persons data across the United States, with a special focus on Tennessee. By combining case-level missing person reports with U.S. Census population data, the analysis will identify trends, demographic patterns, and geographic hotspots. The outcome will be a clear, data-driven picture of who is most at risk and where missing person cases are most concentrated.

**2) Motivation**

* Missing-person cases are socially and emotionally critical events; understanding patterns can help target prevention and allocate resources.
* As someone learning to use data for meaningful insights, I see this project as an opportunity to apply analytics in service of a real-world issue that touches families, law enforcement, and policymakers. My goal is to make the findings both technically sound and accessible — creating tools and visuals that don’t just inform but also resonate with people who care about safety in their communities.

**3) Hypotheses**

* **Trend Analysis:** How have missing person cases changed over time nationally and in Tennessee?
* **Demographics:** Which age, gender, or racial groups are most represented among missing persons relative to population?
* **Geographic Patterns:** Which Tennessee counties have the highest missing person rates (per 100,000 population)?
* **Comparisons:** How does Tennessee compare to national averages?

**4) Data Sources**

* **Missing Persons Data:** Public datasets such as NamUs/ Missing People in America /Tennessee Bureau of Investigations
* **Population Data:** Census.gov
* **Geographic Data:** County-level FIPS codes for mapping.

**5) Methodology**

1. **Data Preparation:** Clean and standardize missing persons data, link cases to counties, and merge with population counts.
2. **Analysis:**
   * Time-series trends by year and month.
   * Demographic breakdowns vs. Census population proportions.
   * County-level missing person rates in Tennessee.
3. **Visualization:**
   * Line charts for trends.
   * Bar charts and proportions for demographics.
   * Maps of Tennessee counties.
   * Personal stories of missing persons.
4. **Deliverables:**
   * Interactive dashboard (Power BI).
   * Slide deck for presentation.

**6) Evaluation & Success Criteria**

* Clean, usable dataset with high coverage for Tennessee.
* At least three strong visualizations (trend, demographic, geographic).
* Clear statistical comparisons between Tennessee and national data.
* Functional interactive dashboard.
* Well-documented code and reproducible workflow.

**7) Deliverables**

1. Interactive dashboard (PowerBI)
2. GitHub repo with data pipeline and analysis code.
3. Presentation slide deck.

**8) Timeline**

* **1:** Data acquisition and cleaning.
* **2:** Exploratory analysis, early visualizations.
* **3:** Build dashboard prototype.
* **4:** Refine analysis, finalize visuals.
* **5:** Presentation of Capstone!

**9) Limitations & Risks**

* Data quality and availability (not all cases may be reported consistently).

**10) Expected Outcomes**

* A set of insights highlighting who is most at risk of going missing in Tennessee.
* Comparison of Tennessee with national averages.
* Actionable findings that can help inform local communities, policymakers, and further research.