# Canadian Salary Data Analysis (2011-2023)

**1. Data Overview**

This report analyzes Canadian salary trends based on Stack Overflow survey data from 2011 to 2023. The dataset includes job titles, industries, experience levels, company sizes, cities, and salaries. It aims to explore how these factors impact average salaries in the Canadian job market.

**2. Data Collection & Exploration**

* **Total Survey Responses**: 7,038 responses are available for analysis.
* **Job Title Distribution**:
  + The most common roles are:
    - Full Stack Developer (31.44%)
    - Backend Developer (19.54%)
    - Frontend Developer (10.26%)
* **Industry Distribution**:
  + The dominant industry is **Information Services, IT, Software Development, or other Technology** with 57.37%.
* **City Distribution**:
  + The top cities are:
    - Montreal (22.35%)
    - Hamilton-Niagara Peninsula (17.59%)
    - Toronto (10.34%)

**3. Data Cleaning & Preparation**

* **Missing Values**: No missing values were detected in key columns such as year, company size, industry, experience, job title, country, or salary.

**4. Salary Trends Over Time**

* **Salaries Evolution (2011-2023)**:
  + Salaries increased the most from **2013 to 2014** (by $8,166.67).
  + The largest decrease occurred from **2014 to 2016** (by $27,375.91).
* **Key Years**:
  + The highest average salary was recorded in **2014** at $87,500.00.
  + The lowest average salary was in **2017** at $41,496.21.

**5. Salary by Industry**

* **Highest Paying Industry**: **Oil & Gas** offers the highest average salary at **$68,851.56**.
* **Lowest Paying Industry**: **Insurance** offers the lowest average salary at **$59,650.68**.
* The salary difference across industries is relatively small.

**6. Salary by Job Title**

* **Top-Paying Job Titles**:
  + **Experienced Developers** have the highest average salary at **$89,222**.
  + Other top earners include **Engineering Managers**.
* There is relatively small variation in salaries across job titles, with developers and managers earning the most.

**7. Salary by Company Size**

* **Larger Companies Pay More**:
  + Companies with **1,000 to 4,999 employees** pay the highest average salary of **$70,042.14**.
  + The smallest companies (**2 to 9 employees**) pay the lowest at **$57,717.66**.
* **Salary Range**:
  + Small companies (2-99 employees) pay between **$57,717.66** and **$64,774.57**.
  + Medium companies (100-4,999 employees) offer higher salaries, up to **$70,042.14**.
  + Large companies (5,000+ employees) offer salaries around **$68,490.03**.

**8. Salary by Experience Level**

* **Experience Impact**:
  + Individuals with **10+ years** of experience earn the highest salaries at **$79,365.21**.
  + **0 to 1 years** experience sees the lowest salaries at **$38,156.98**.
* **Significant Salary Jump**:
  + A major increase is observed after **5 years** of experience.
  + Salaries jump from **$51,588.93 (2 to 4 years)** to **$64,010.79 (5 to 9 years)**, with another increase after 10 years.

**9. City-Wise Salary Comparison**

* **Highest Paying City**:
  + **Toronto** offers the highest average salary at **$82,676.04**.
* **Lowest Paying City**:
  + **Windsor-Sarnia** offers the lowest average salary at **$45,596.53**.
* **Urban vs. Rural Areas**:
  + Urban centers like Toronto and London have significantly higher salaries compared to smaller regions like Regina and Windsor-Sarnia.

**Conclusion**

This analysis reveals that salary in Canada is influenced by various factors, with larger companies, certain industries like Oil & Gas, more experience, and cities like Toronto offering higher salaries.