

Careers Outlook for Mathematics Majors

For the San Diego/Los Angeles-Long Beach-Anaheim/
Riverside-San Bernardino-Ontario regions

Based on data from Burning Glass
for the time period 8/1/2020 - 7/31/2021

College of Science, Technology, Engineering, and Mathematics
California State University San Marcos



Welcome to the Department of Mathematics at CSUSM

<https://www.csusm.edu/math/>

Mathematics students will develop the ability to explore, conjecture, and reason, as well as solve a variety of problems. Opportunities for students with a strong background in mathematics are as diverse as they are plentiful. Medical schools, law schools, graduate schools, and employers in fields such as economics, accounting, management sciences, mathematics, natural sciences, social sciences, computer science, statistics, and communication seek graduates in mathematics. Mathematics majors can pursue a career in the teaching of mathematics at the K-12 level or college level.

A degree in Mathematics from California State University San Marcos prepares you to meet any of these challenges, and our faculty are committed to helping you achieve your goals.

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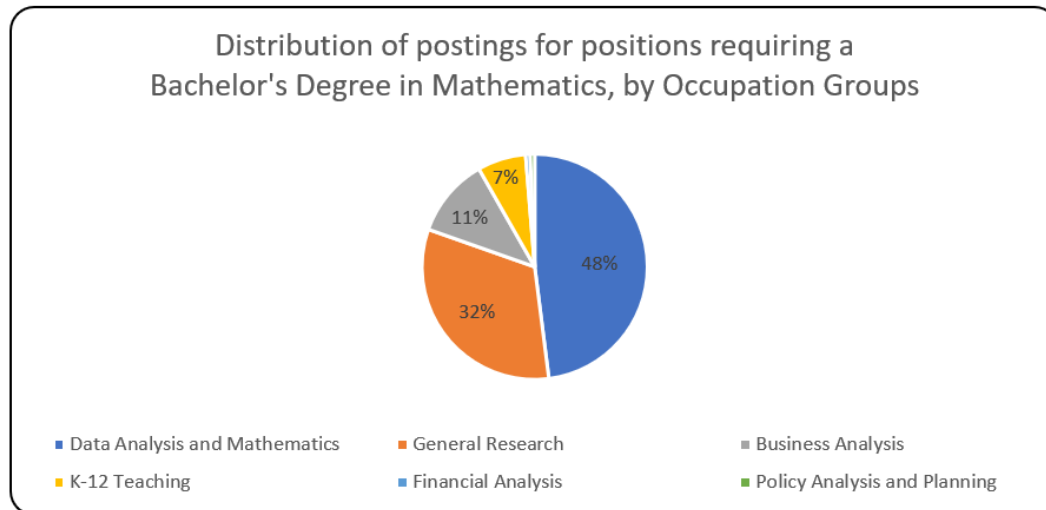
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1 Details by Occupation

Occupation Group	Postings	Employment (2020)	Employment Growth (2019 - 2020)	Projected Employment Growth (2020-2030)
Data Analysis and Mathematics	6,671	6,838	-6.1%	19.5%
General Research	4,504	2,628	-10.3%	25.0%
Business Analysis	1,581	1,122	-16.3%	25.9%
K-12 Teaching	966	12,458	-13.8%	1.5%
Financial Analysis	90	1,041	-10.7%	6.2%
Policy Analysis and Planning	89	290	3.6%	-6.9%

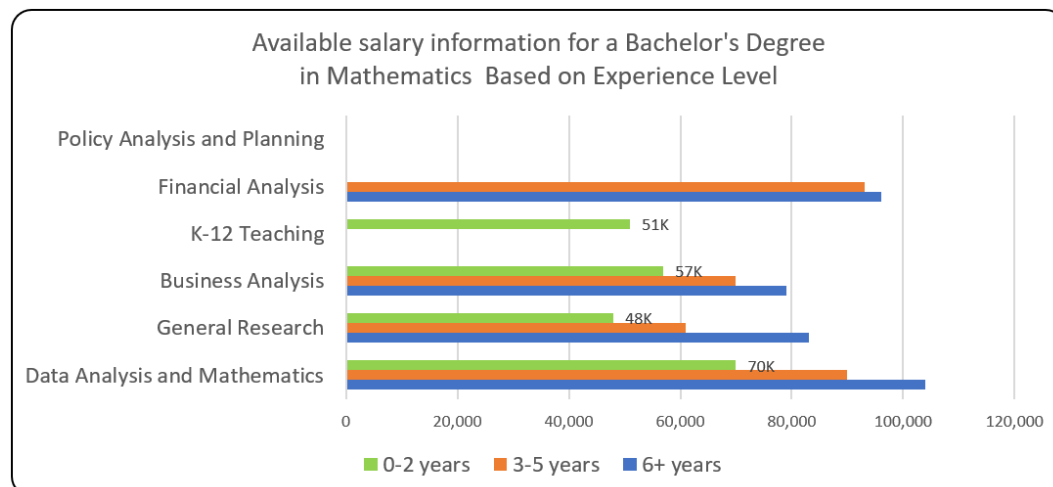
2 Versatility of the degree

Graduates of this program usually transition into any of the 6 different occupation groups:

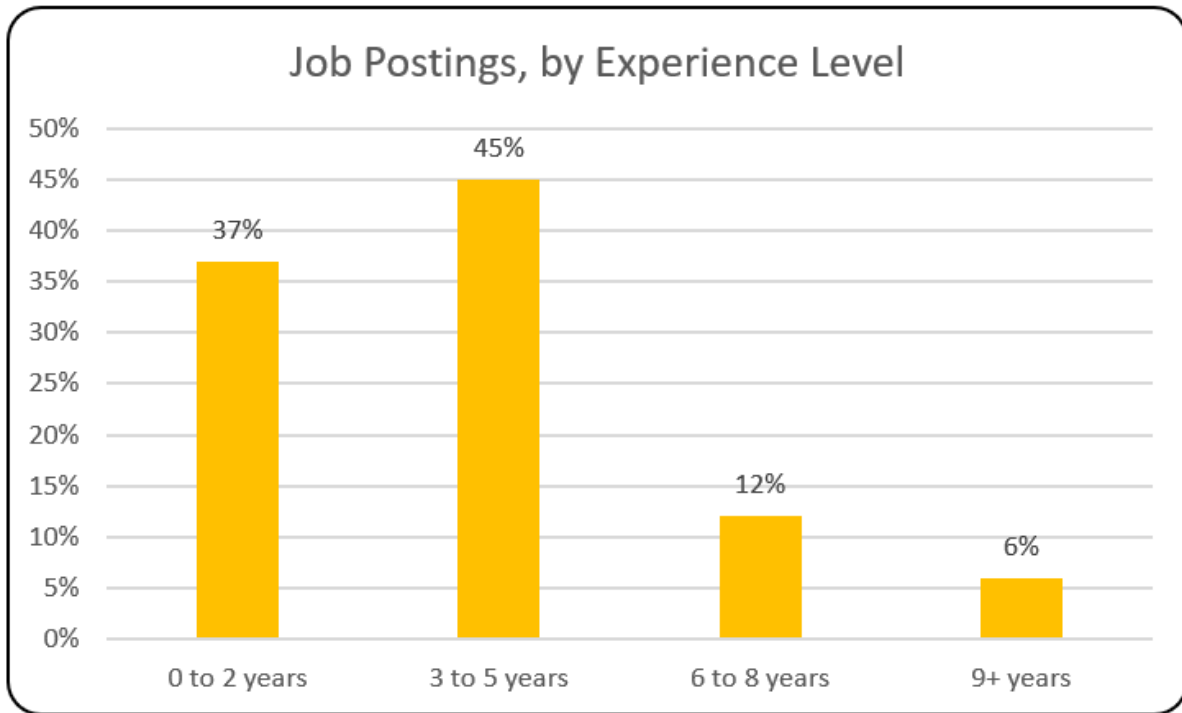


3 What Salary will my graduates find upon graduation?

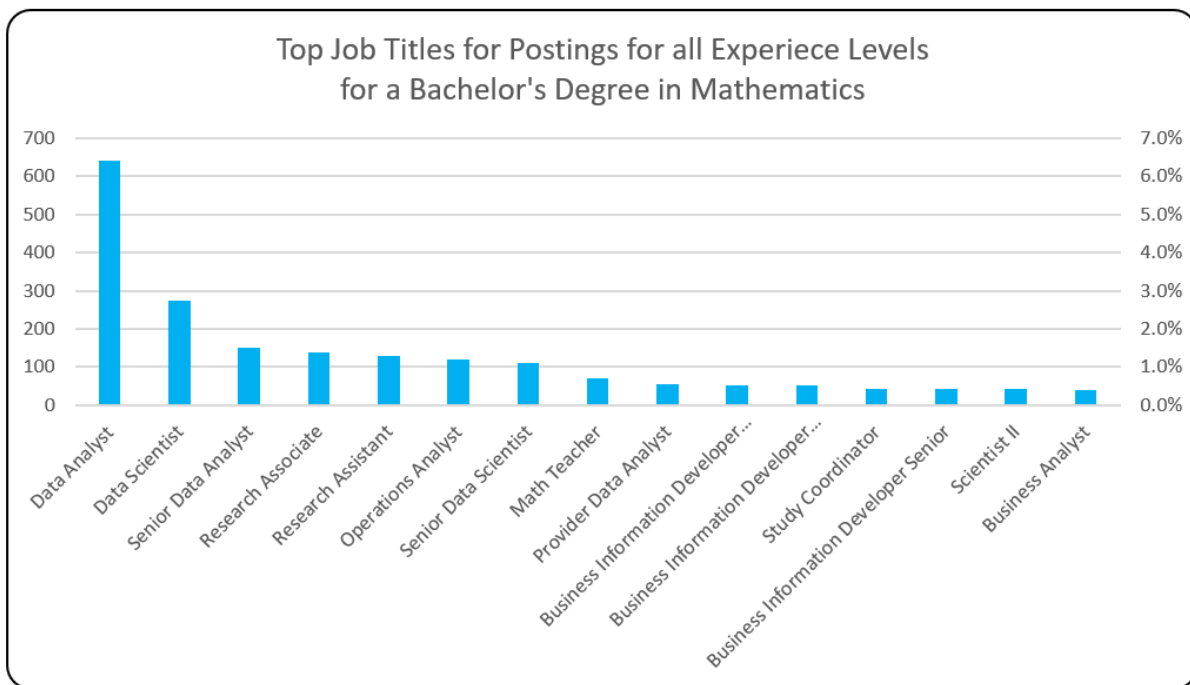
The median salary in Los Angeles-Long Beach-Anaheim, CA, Riverside-San Bernardino-Ontario, CA and San Diego-Carlsbad, CA for graduates with a degree in Mathematics is \$71K.



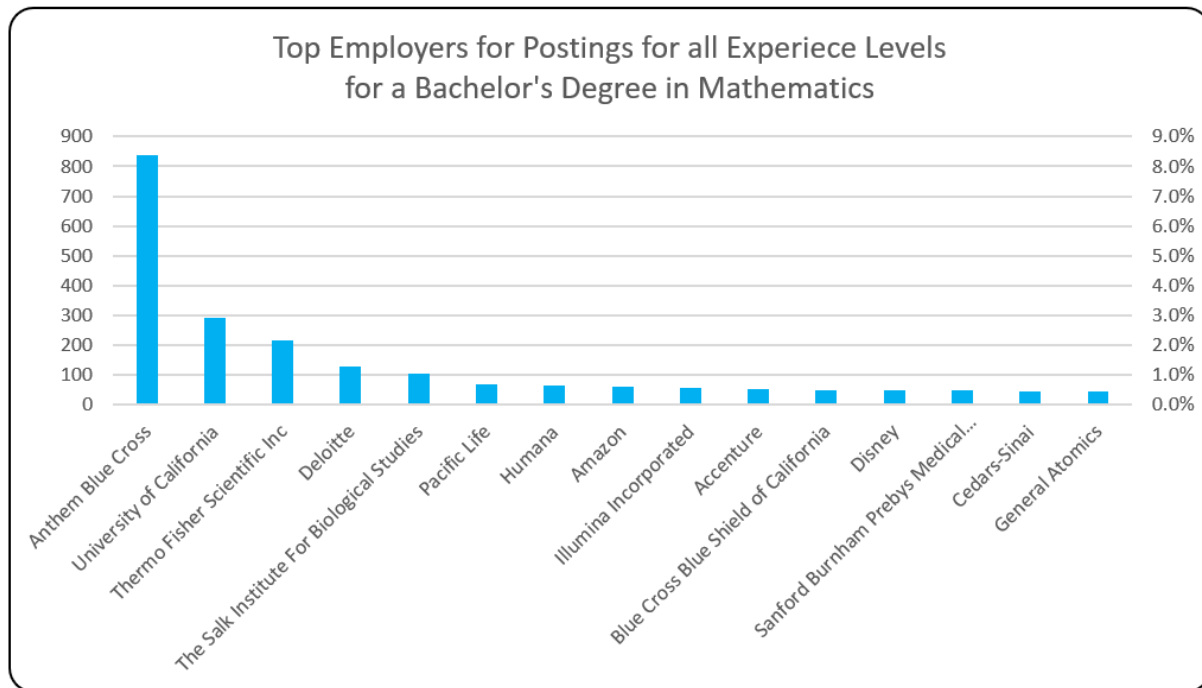
4 Job Postings by Experience Requested



5 Top Job Titles



6 Top Employers

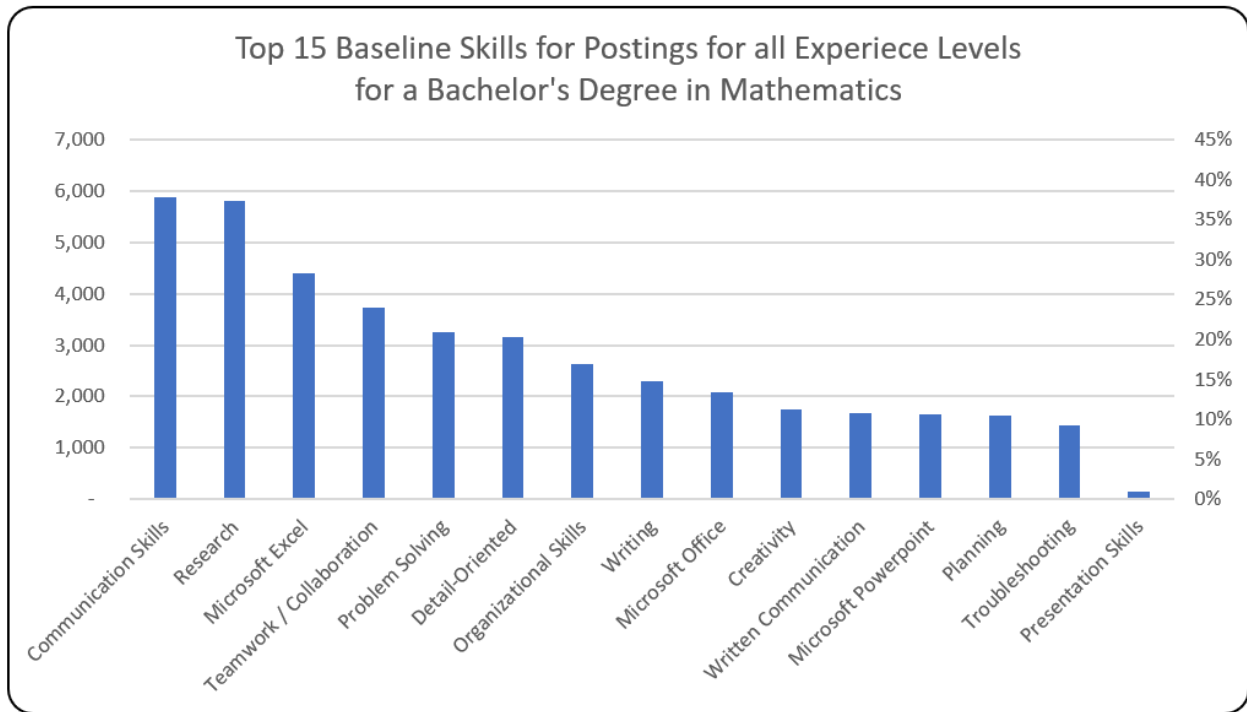


7 Key Competencies

7.1 Top 15 Specialized Skills

SKILL	POSTINGS	PROJECTED GROWTH	SALARY PREMIUM	COMPETITIVE ADVANTAGE
Data Analysis	4144 (29.9%)	7.4%	No	No
SQL	3945 (28.5%)	8.5%	No	No
Python	2693 (19.5%)	48.0%	Yes	No
Data Science	2157 (15.6%)	127.3%	No	No
Tableau	2122 (15.3%)	85.1%	No	No
Project Mgt	1609 (11.6%)	5.4%	Yes	Yes
Experiments	1434 (10.4%)	6.8%	No	No
Machine Learning	1312 (9.5%)	74.9%	Yes	No
Data Mining	1146 (8.3%)	8.7%	No	No
Scheduling	1118 (8.1%)	4.2%	No	No
Data Visualization	1117 (8.1%)	94.4%	No	No
Data Warehousing	1070 (7.7%)	8.5%	No	No
Quality Assurance & Ctrl	1031 (7.5%)	4.0%	No	No
SAS	1023 (7.4%)	8.2%	Yes	No
Microsoft Power BI	1014 (7.3%)	608.0%	No	No

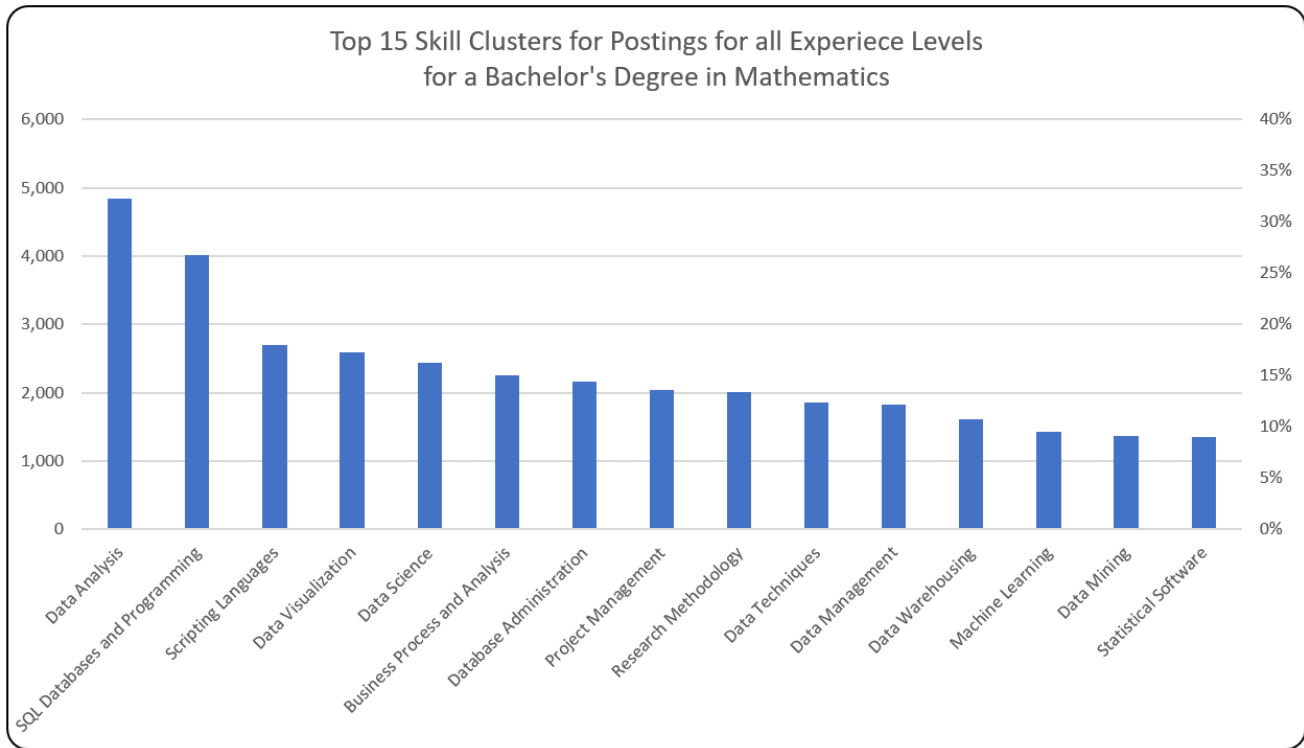
7.2 Top 15 Baseline Skills



7.3 Top 15 Software Programming Skills

SKILL	POSTINGS	PROJECTED GROWTH	SALARY PREMIUM	COMPETITIVE ADVANTAGE
Microsoft Excel	4411 (31.9%)	5.7%	No	No
SQL	3945 (28.5%)	8.5%	No	No
Python	2693 (19.5%)	48.0%	Yes	No
Tableau	2122 (15.3%)	85.1%	No	No
Microsoft Office	2078 (15.0%)	5.0%	No	No
Microsoft Powerpoint	1657 (12.0%)	5.6%	No	No
Data Visualization	1117 (8.1%)	94.4%	No	No
Microsoft Word	1078 (7.8%)	5.5%	No	No
SAS	1023 (7.4%)	8.2%	Yes	No
Microsoft Access	722 (5.2%)	5.1%	No	No
Oracle	573 (4.1%)	3.9%	No	Yes
R	543 (3.9%)	9.4%	No	No
SAP	499 (3.6%)	6.0%	No	No
Java	494 (3.6%)	9.3%	No	No
Apache Hadoop	493 (3.6%)	8.9%	No	No

7.4 Skill Clusters



7.5 Top 15 Salary Premium Skills

SKILL	POSTINGS	PROJECTED GROWTH	SALARY PREMIUM	COMPETITIVE ADVANTAGE
Python	2693 (19.5%)	48.0%	Yes	No
Project Management	1609 (11.6%)	5.4%	Yes	Yes
Machine Learning	1312 (9.5%)	74.9%	Yes	No
SAS	1023 (7.4%)	8.2%	Yes	No

7.6 Top 15 Competitive Advantage Skills

SKILL	POSTINGS	PROJECTED GROWTH	SALARY PREMIUM	COMPETITIVE ADVANTAGE
Project Management	1609 (11.6%)	5.4%	Yes	Yes

8 Skills Requested Most Frequently by Industry

8.1 Finance

Baseline Skills	Specialized Skills
Microsoft PowerPoint	Economics
Planning	Financial Analysis
Analytical Skills	Data Science
Communication Skills	Python
Written Communication	Machine Learning
Detail-Oriented	Budgeting
Problem Solving	Data Warehousing
Teamwork / Collaboration	
Microsoft Office	

8.2 Professional, Scientific, and Technical Services

Baseline Skills	Specialized Skills
Communication Skills	SQL
Research	Data Analysis
Microsoft Excel	Data Science
Detail-Oriented	Economics
Creativity	Python
Presentation skills	SAS
Critical thinking	Data Mining
Teamwork / Collaboration	Tableau
Analytical Skills	R
Microsoft Powerpoint	

8.3 Information

Baseline Skills	Specialized Skills
Teamwork / Collaboration	Python
Communication Skills	Data Analysis
Analytical Skills	Data Science
Leadership	Machine learning
Organizational Skills	SQL
Problem solving	Data visualization
Research	Experiments
Writing	Physics
	Bayesian Modeling

9 Sample Job announcements

9.1 Junior Data Analyst for Aperture Solutions Group

Aperture Solutions Group Inc is seeking a Junior Data Analyst to provide support to our client in Pomona, CA. Aperture is a Government Technology Solutions company who provides critical services and technical solutions to National Security customers and other Federal agencies. This position is temporary in nature and currently expected to last about six months. The position requires a detail-oriented data analyst with expert level MS Excel skills, the ability to work with large data sets, identify data anomalies, reformat data for ingest into business intelligence tools. The analyst should be able engage with operational groups to review data sets, identify strategies for capturing key performance indicators and other operational metrics.

ESSENTIAL DUTIES AND RESPONSIBILITIES

- Receive, process, conduct data entry, data analysis, data quality assurance, data quality control, and data integration
- Review and analyze data for accuracy
- Interact with personnel, facility managers, customers, and other stakeholders
- Propose, plan, document, and implement process improvement initiatives using continuous improvement approaches.
- Synthesizing and analyzing information from various sources to identify trends, opportunities and risks regarding processes and process improvements using standard statistical techniques.
- Works with stakeholders to create and update measurement plans
- Providing meaningful qualitative and quantitative reports, analysis, and evaluation to management including feedback on maximizing process effectiveness and efficiency.
- Participating in the on-going development of data quality control, data collection, and reporting to enhance decision making capabilities, accuracy, reliability, and timeliness of performance data.
- Providing reports and analysis on service level performance.

MINIMUM REQUIREMENTS

- Bachelor's Degree in Business, Mathematics or another analytical field,
- Minimum of three (2) years of documented experience in data entry, management, analysis
- Ability to successfully pass drug screening and a federal background check is required

Job Types: Full-time, Temporary **Pay:** \$38.00 - \$44.00 per hour

Schedule:

- 8 hour shift
- Day shift
- Monday to Friday

Education: Bachelor's (Required)

Experience: Data analytics: 2 years (Required)

Work Location: Pomona, CA

Work Remotely: No

9.2 Financial Analyst

Company: **Vistage Worldwide, Inc.**

Location: **San Diego**

Posted on: **April 21, 2021**

Job Description:

POSITION SUMMARY. We are looking for Motivated Financial Analyst with experience working in data analytics to drive business insights around technology enablement, digital transformation and enterprise intelligence. If you are looking to work in a dynamic fast paced FP&A team then we want to hear from you!

THE COMPANY. Vistage is the world's largest CEO coaching and peer advisory organization for small and midsize business (SMB) leaders. We offer the most effective approach for SMB enterprises to achieve better results and grow faster as well as for SMB leaders to maximize their impact. The 22,000+ members we serve are CEOs, owners and executives of SMB organizations located across the US and in 22 countries around the world.--These SMB executives typically spend a day or more with Vistage every month to immerse themselves in our comprehensive platform for making better decisions, getting better results and becoming better leaders. Our platform features three core elements: valuable perspectives from a trusted group of peers, professional guidance and meeting facilitation from an accomplished business leader (the Chair), and deep insights from subject matter experts.

Vistage was founded more than 60 years ago and we've grown every year since then by innovating to stay on the cutting-edge of business and being relentless in delivering value to our members.--Our success is demonstrated by the fact that Vistage member companies grow 2.2 times faster than non-Vistage peer companies.--Learn more about us at www.vistage.com.

VISTAGE EMPLOYEE LIFE. Vistage's success is anchored by a unique culture which reinforces employee commitment to the Vistage mission. It is a spirit of collective success and achievement which is also reflected in our workplace.

Our US headquarters sits in the heart of San Diego's UTC area. It features an open, modern aesthetic with lots of collaboration spaces, free lattes and Kombucha on tap! From our San Diego base, we collaborate with colleagues based across the country and around the world. We sweat the details. Our onsite gym is decked out with Peloton bikes, a Mirror workout system and plenty of other equipment to keep your workout challenging and fresh. On-site yoga classes, chair massages and smoothie days also help to keep us focused and healthy! We invest in your career. Each employee has an actionable career progression plan developed through individual collaboration with their manager. We focus on promoting from within and employee progression plans are complemented by all-staff development days held in our state-of-the-art learning center as well as access to tons of individualized development resources and a tuition reimbursement program.

We invest in you. Our employee benefits program is one of the most generous you'll find. Fully paid healthcare is provided for employees through Anthem Blue Cross along with access to dental, vision and life insurance coverage. Take care of your financial future with 401(k) matching funds eligibility after your first month as an employee and utilize the free individual investment counseling we provide to help you grow the money you've saved. You'll also start with 16 days of paid time off per year to allow you to relax and recharge . . . employees receive additional annual paid days off based on tenure.

We keep it fun! Whether you're enjoying our summer baseball outing, unwinding during an employee happy hour or toasting your co-workers at our epic annual holiday party, you'll see that we take having fun as seriously as helping our members succeed! The office vibe is business casual with flexible schedules along with freedom to work from home in bunny slippers if that's your thing! We value mutual respect and laughter . . . we hate stiff formality. You'll have regular access to Vistage executives-our CEO even buys everyone doughnuts several times a year to fuel his informal employee chats! Vistage's culture and sense of mission drives employee loyalty: more than half of our staff has been with the company for five years or longer. Are you ready to start your Vistage journey?

RESPONSIBILITIES:

- Design and maintain financial models and streamline reporting that continues to increase accuracy in forecasting revenue, COGS, operating expenses, and balance sheet items
- Able to construct models that analyze large dataset to generate insights
- Prepare monthly financial and metrics reports by collecting, analyzing and summarizing information and providing commentary
- Provide variance analysis and financial insight for budget/forecast vs. actuals
- Participates in the budget process by gathering assumptions and analyzing data
- Develop informative and actionable analysis that highlights relevant business trends and opportunities for improvement
- Support the company's growth and financial goals by performing data mining of large data sets and creating custom metrics as determined by the business
- Partner with other Finance team members to understand ad-hoc business needs, propose solutions, and query the BI360 data warehouse resulting in the delivery of insightful ad-hoc reports
- Work cross-functionally with numerous internal teams, such as Marketing, Operations, Business Intelligence, and Accounting to deliver accurate and scalable reporting to the business
- Effectively and openly communicate with individuals at all levels
- Comfortable working with diverse business scenarios, handling multiple priorities and have a business & consultancy mind-set, while technically (data) savvy.

QUALIFICATIONS:

- A Bachelor or master's degree in a quantitative field (Mathematics, Physics, Computer Science, Statistics)
- 0-3 Years of related experience
- Experienced in reporting & analysis automation
- High level of proficiency with Excel, PowerPoint, Word
- Practical experience in BI tools in a data rich environment (Power BI, BI360, Tableau, SQL) is a plus

We are ideally looking for someone who can:

- Provide data analytics services to help solve business problems, drive value, and gain strategy and insight from information
- Use advanced data analysis techniques that leverage technology to process large volumes of data to perform complex computations in a scalable, reproducible and automated manner
- Support information intelligence, including the collection, storage, usage and quality of information
- Work as a key member of a team to implement integrated enterprise-wide reporting solutions for data transformation and delivery.
- Perform data analytics to help solve business challenges and achieve data automation, reconciliation, traceability, lineage and transparency Use data analytics to provide actionable, timely and accurate data to drive business insights around technology enablement, digital transformation and enterprise intelligence