The 2024 Datathon:
"Boosting the Virginia Workforce"

Welcome to the showcase of innovative solutions from the 2024 Datathon, where participants tackled the challenge of "Boosting the Virginia Workforce." In this document, you'll find a curated collection of presentations, each accompanied by a brief description highlighting the unique approach and insights offered by our talented participants. From leveraging predictive analytics to gauge policy impacts to optimizing existing workforce platforms, these solutions exemplify the power of data-driven innovation in addressing real-world challenges. We invite you to explore these presentations and witness firsthand the creativity and ingenuity of our participants in driving positive change for Virginia's workforce.

First Place: Team Norfolk (City of Norfolk)

Challenge: The Virginia Initiative for Education and Work or "VIEW" Program offers employment, education, and training opportunities to help individuals achieve economic independence. However, timely and efficient distribution of information to program participants is a challenge. Frequently, the program needs to inform participants about new job openings throughout the region in a timely manner, so there are no missed opportunities. How can communication be improved?

Solution: A data informed employment notification by texting program. The team created a dashboard based on the "Virginia 2024 High Demand Occupations dashboard" that is specific to the Hampton Roads region and can be filtered by career cluster. It provides information such as job outlook and average salaries, as well as support services. The dashboard is mobile friendly and can be distributed through text. When new jobs arise, the office can automatically send out texts, delivered with a Python script, tailored with content specific to that job. **Link:** https://www.youtube.com/watch?v=7jzwsm-XIrA

Second Place: Team Alpha1Data

Challenge: This presentation focuses on bridging the gap between job seekers and employment opportunities in the Commonwealth. Challenges mentioned include rising interest rates and the integration of AI technology. The question they aim to answer is "how to increase workforce participation" and "how do we provide job seekers with access to more opportunities and skill-based training."

Solution: The solution they propose is the "Commonwealth AI Career Hub Portal," a "one stop, get hired destination." The mobile app platform includes a centralized view of workforce development programs, skill-based trainings, and a

mentor resource. Employers are also given access to available tax credits, candidate finder tools, and resources for hiring veterans.

Link: https://www.youtube.com/watch?v=CC0HS00SecI

Third Place: Team Data Tribe (William and Mary)
Challenge: How can policymakers make informed, data driven decisions related to the workforce?

Solution: WorkWatch VA, an interactive Power BI dashboard (linked here) with three main components: Virginia Employment Statistics, Unemployment Rate forecast which offers predictive insights into the future unemployment rate, and a Policy Impact estimator which estimates how various policy decisions will impact unemployment.

Link: https://www.youtube.com/watch?v=2KFXmF4C7eU

People's Choice: WM MSBA (William and Mary)
Challenge: On a county-wide level, what factors significantly affect labor force participation, and how can they be used to boost the workforce?

Solution: A model was created bases on labor force participation and demographics such as race. A solution to increase underrepresented populations includes measures such as: encouraging areas to become "Certified Welcoming" cities like Roanoke, removing immigration-related barriers to obtaining professional licenses, and invest in training for sectors that are forecasted to grow. The team also found that in increase in associate degrees results in a decrease in labor force participation. The solution to this is providing incentives to companies to hire those with associate degrees through tax breaks and subsidies, upskilling programs, and offering stackable credits at state institutions to allow students to apply credits from an associate degree to a bachelor's degree.

Link: https://www.youtube.com/watch?v=-IhfxaHZqFw

Team Model Mayhem
Challenge: This presentation focuses on the areas of opportunity for "The Virginia Workforce Connection" platform.

Solution: The solution they propose is Enhancing Virginia's Job Search Platform for Digital Inclusion. This solution has three key parts: Forge strategic partnerships, create a dedicated platform for youth to support education, career exploration, and skill development, and eliminate ineffective training content and substitute it with upgraded tutorials.

Link: https://www.youtube.com/watch?v=awkg6z-WGBk

Team Exponential Rangers

Challenge: Job searching has three main challenges: Navigating a complex landscape of mismatched skills and requirements, the time-consuming process of tailoring numerous applications, and a lack of robust networking opportunities.

Solution: "Granted," an AI powered platform that offers personalized education pathways, automated resume and cover letter creation, and enhanced networking opportunities.

Link: https://www.youtube.com/watch?v=WN23U40QruI

Team DATARVA

Challenge: There is high demand for engineers in Virginia, but not enough engineers to fill the open positions.

Solution: Facilitate and promote engineering internships and research scholarships, invest in engineering startups in Blacksburg, Christiansburg, and Charlottesville.

Link: https://www.youtube.com/watch?v=UsFIcYyrixs

Team Data Ninjas (Virginia Department of Health)

Challenge: Jobs.virginia.gov has an area of opportunity when it comes to key word matching. Currently, candidates are missing out on relevant job opportunities because key word search results don't yield all relevant roles.

Solution: Implement enhancements, such as keyword tagging and advanced filter options, to jobs.virginia.gov to help candidates find more relevant roles, resulting in a higher proportion of job hires per total applicants within 12 months and reducing the time-to-hire for Virginia Government jobs by at least 10%.

Link: https://www.youtube.com/watch?v=RH9W9eJe85s

Team Data Miners Analytics Division (Department of Medical Assistance Services)

Challenge: Virginia has a relatively low unemployment rate, but it lags states like Maryland.

Solution: A program like Maryland's STARs (Skilled Through Alternative Routes) program. An enhanced training program will be implemented through local community colleges. Employee engagement and work life balance will be improved through the "STAR" mobile app. The app provides financial services, health and wellbeing benefits, travel assistance, and social perks.

Link: https://www.youtube.com/watch?v=_sYk1DLmkeI

Team DCJS (Department of Criminal Justice Services)

Challenge: How can we bridge the skills gap and address the VA worker shortage index?

Solution: Use proven ways to boost the workforce, modernize the career fair, and put emphasis on skilled trades and encourage career and technical education (CTE) participation. Additionally, providing tuition assistance and housing assistance.

Link: https://www.youtube.com/watch?v=i9DIn7kNM_w

Team Statletes

Challenge: The team aims to address three research questions: What are/will be the most in-demand jobs in Virginia, how can we assess employment/unemployment by locality, and how can we asses the Virginia workforce's education levels?

Solution: To address unemployment, set up state-funded geofencing within each county, target the most densely populated areas, and advertise the highest demand jobs to those people. Also, city jobs should be relocated from urban areas to rural areas.

Link: https://www.youtube.com/watch?v=W-2sL9gviEU

Team Keydets

Challenge: How can we improve education to expand the workforce?

Solution: Enhance education, invest in infrastructure, support teacher training, improve access to higher education. Money for these efforts can come from private and public partnerships and state budget allocation.

Link: https://www.youtube.com/watch?v=RWiBAfyx_CE