**1. Data Analyst**

**Key Skills:**

* Data wrangling and cleaning (Python, Pandas, SQL)
* Data visualization (Power BI, Tableau, Matplotlib, Seaborn)
* Basic statistics (Excel, R)
* Reporting and dashboards

**YouTube Resources:**

* [Corey Schafer - Python Pandas Tutorial Series](https://www.youtube.com/playlist?list=PL-osiE80TeTt2d9bfVyTiXJA-UTHn6WwU)
* [Alex The Analyst - How to Become a Data Analyst](https://www.youtube.com/watch?v=goMoL9FRUQs)
* [Simplilearn - Data Visualization in Tableau](https://www.youtube.com/watch?v=aUPGx2nrOUM)

**2. Data Scientist**

**Key Skills:**

* Advanced machine learning algorithms (scikit-learn, TensorFlow, PyTorch)
* Statistical analysis (Python, R)
* Data manipulation (Pandas, NumPy)
* Model deployment (Flask, Docker)

**YouTube Resources:**

* [StatQuest with Josh Starmer - Machine Learning Basics](https://www.youtube.com/playlist?list=PLblh5JKOoLUIxGDQs4LFFD--41Vzf-ME1)
* [Krish Naik - Complete Data Science Playlist](https://www.youtube.com/playlist?list=PLZoTAELRMXVNxYFq1S2fWWx6XDs3dG8bT)
* [Codebasics - Machine Learning Tutorials](https://www.youtube.com/playlist?list=PLc2rvfiptPSRXXFpjxg4yjF4ylASHoAlC)

**3. Data Engineer**

**Key Skills:**

* Data pipeline development (ETL tools, Apache Airflow)
* Database management (SQL, NoSQL, Hadoop, Spark)
* Cloud computing (AWS, Azure, Google Cloud)
* Data architecture

**YouTube Resources:**

* [Tech With Tim - Data Engineering with Python](https://www.youtube.com/watch?v=p4wHSLqpz50)
* [Datapipelines - Apache Airflow Tutorial](https://www.youtube.com/watch?v=l4ztmF1x7Z4)
* [Cloud Academy - Introduction to AWS for Data Engineers](https://www.youtube.com/watch?v=VVn9OG9nfH0)

**4. Machine Learning Engineer**

**Key Skills:**

* Deep learning (TensorFlow, Keras, PyTorch)
* Model optimization and tuning
* Deploying ML models (Docker, Kubernetes)
* Software engineering principles for machine learning (CI/CD, version control)

**YouTube Resources:**

* [Sentdex - Deep Learning with Python and TensorFlow](https://www.youtube.com/playlist?list=PLQVvvaa0QuDcjD5BAw2DxE6OF2tius3V3)
* [deeplearning.ai - TensorFlow for Machine Learning](https://www.youtube.com/playlist?list=PL9tQ3WmAF-4mrWF-LdS58NEX0B0aZMo8S)
* [Coding TensorFlow - TensorFlow in Production](https://www.youtube.com/playlist?list=PLQY2H8rRoyvzDbLUZkbudP-MFQZwNmU4S)

**5. AI/ML Researcher**

**Key Skills:**

* Cutting-edge algorithms (GANs, reinforcement learning)
* Mathematical modeling (probability, calculus, linear algebra)
* Research papers and publications
* Prototyping in Python (PyTorch, TensorFlow)

**YouTube Resources:**

* [Yannic Kilcher - AI Research Explainers](https://www.youtube.com/c/YannicKilcher)
* [Two Minute Papers - Latest AI Research](https://www.youtube.com/c/K%C3%A1rolyZsolnai)
* [Brandon Rohrer - Machine Learning Walkthrough](https://www.youtube.com/c/BrandonRohrer)

**6. Business Intelligence (BI) Analyst**

**Key Skills:**

* Business metrics and KPIs
* Dashboard creation (Power BI, Tableau)
* Data storytelling
* SQL for reporting

**YouTube Resources:**

* [Guy in a Cube - Power BI Tutorials](https://www.youtube.com/c/GuyinaCube)
* [Analytics with Nags - BI Tutorials](https://www.youtube.com/c/AnalyticswithNags)
* [Tableau Tim - Tableau Full Course](https://www.youtube.com/watch?v=MYoJHYYZ4eM)

Each role is unique in its focus and toolset, and these YouTube channels will provide a mix of theoretical and practical insights into these areas.