

WINMAXXERS

NANOVERSE

By Cole Scott, Darell Barnes, Damone Washington, and Quintin Ampofo





DARELL BARNES

Sophomore

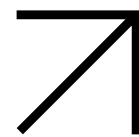
Voorhees University



COLE SCOTT

Sophomore

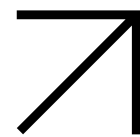
Hampton University



QUINTIN AMPOFO

Junior

Hampton University



**DAMONE
WASHINGTON**

Senior

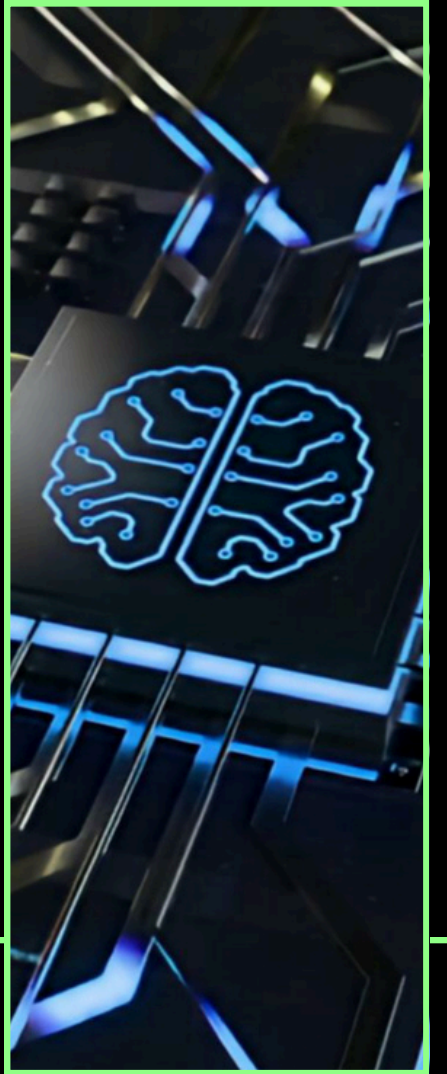
Winston-Salem State
University



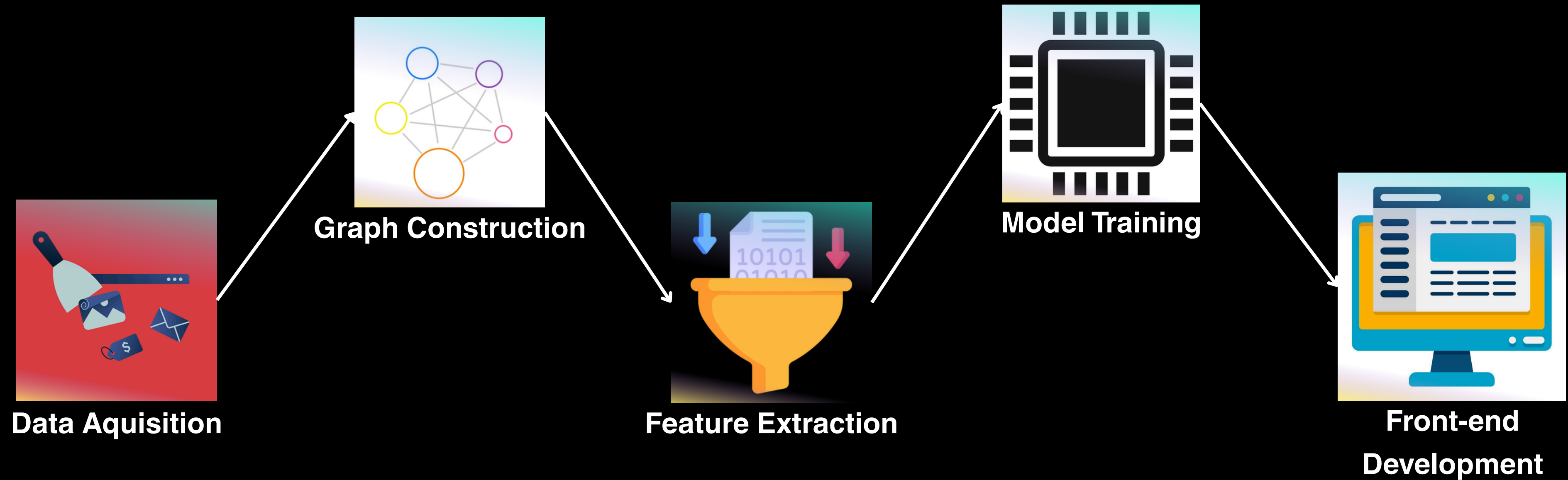
INNOVATION TRACK

FUTURE EVENT PREDICTION

“WHICH NANOTECHNOLOGY TOPICS ARE MOST
LIKELY TO BECOME THE NEXT EMERGING OR
FAST-GROWING AREAS IN THE COMING YEAR, BASED
ON HISTORICAL KNOWLEDGE-GRAPH PATTERNS”



PROJECT PIPELINE



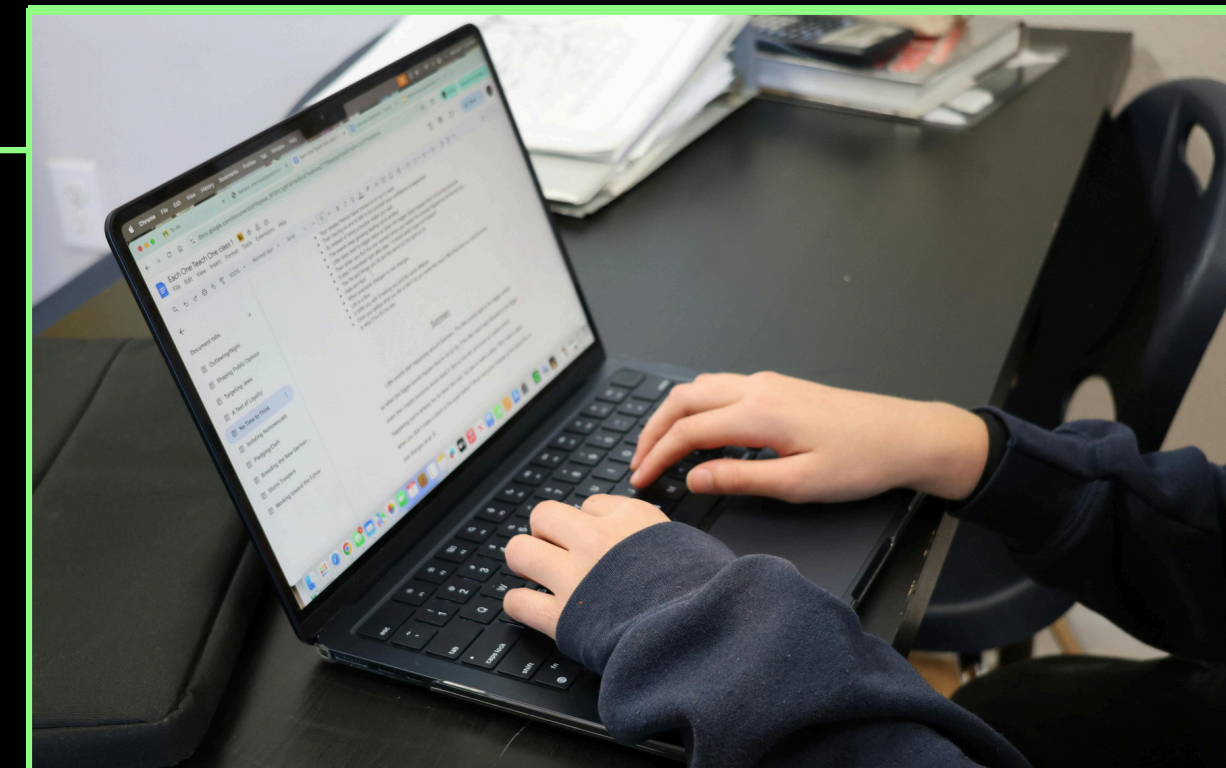
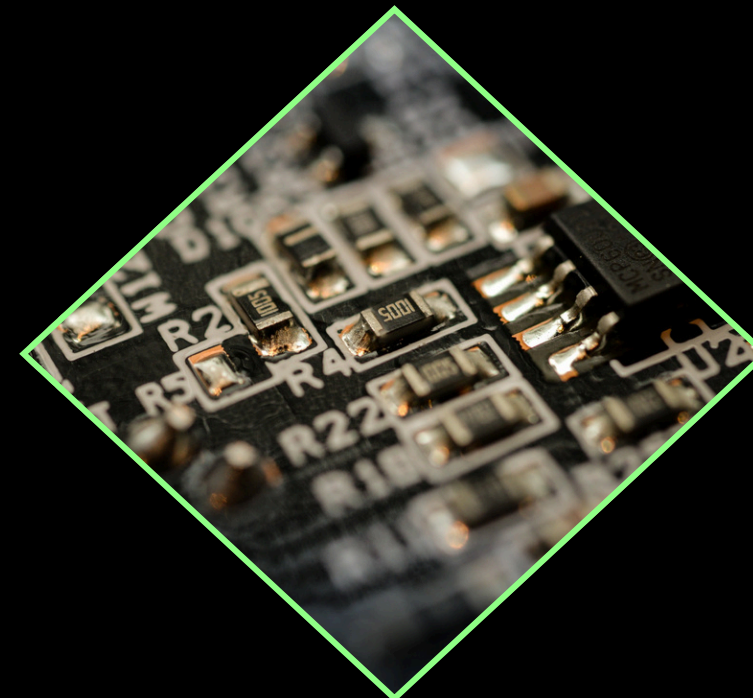


TECHNOLOGIES USED

- Python — core data science engine
- Pandas — fast table-style data handling
- NumPy — efficient numerical computation
- XGBoost — high-performance predictive modeling
- Scikit-Learn — metrics, preprocessing, evaluation
- Matplotlib — clear, customizable visual charts
- Knowledge Graph Features — PageRank, centrality
- Time-Series CV — prevents future data leakage
- Outlier Clipping — stabilizes noisy growth values
- Modular Python Scripts — clean, scalable format

- Microsoft Copilot — AI coding + research assistant
- Canva — polished slides and visuals
- Gemini — supplemental idea exploration and graphs
- GitHub — version control + collaboration
- VS Code — coding, debugging, project editing
- Google Colab — cloud notebooks for testing

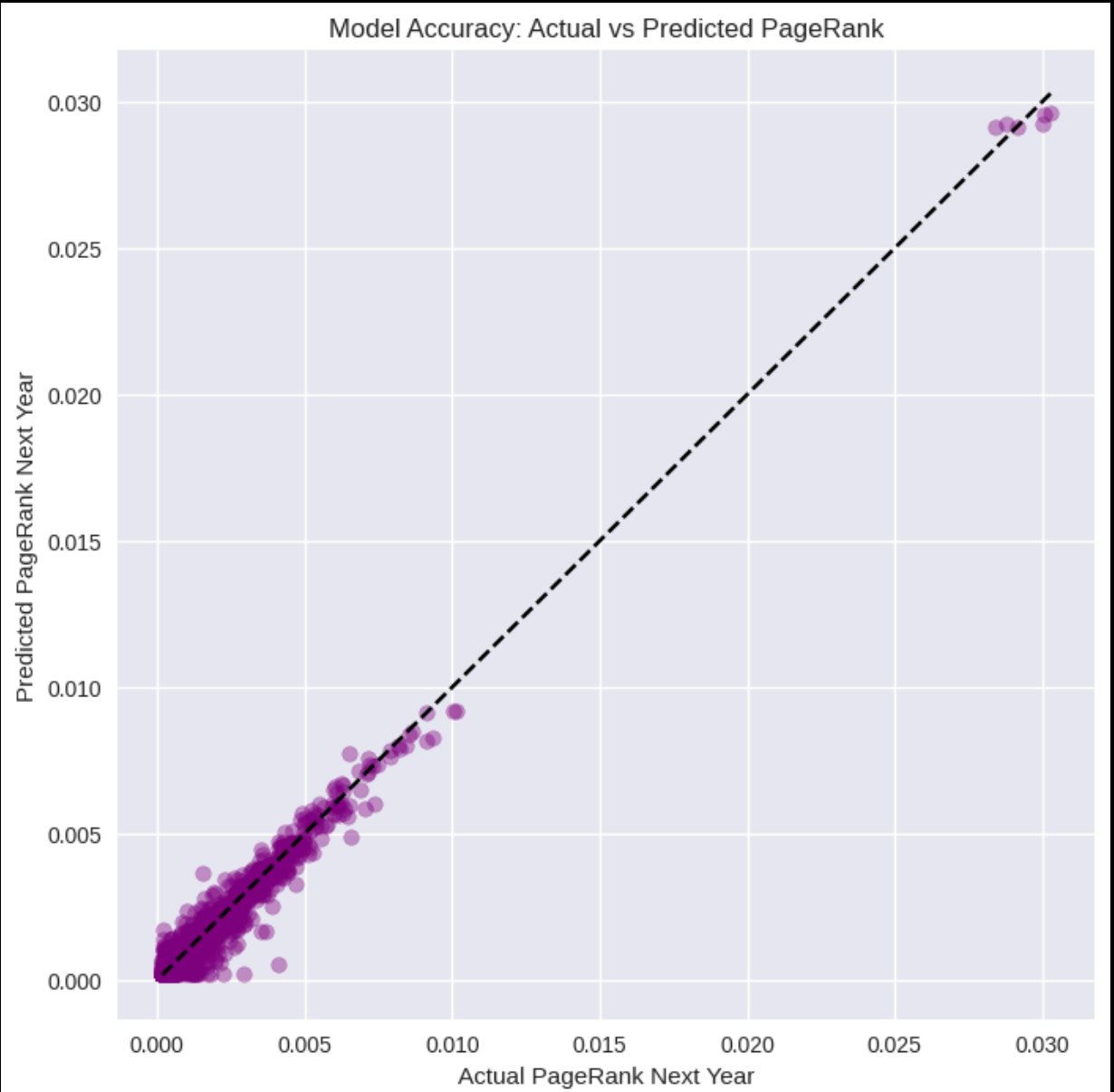
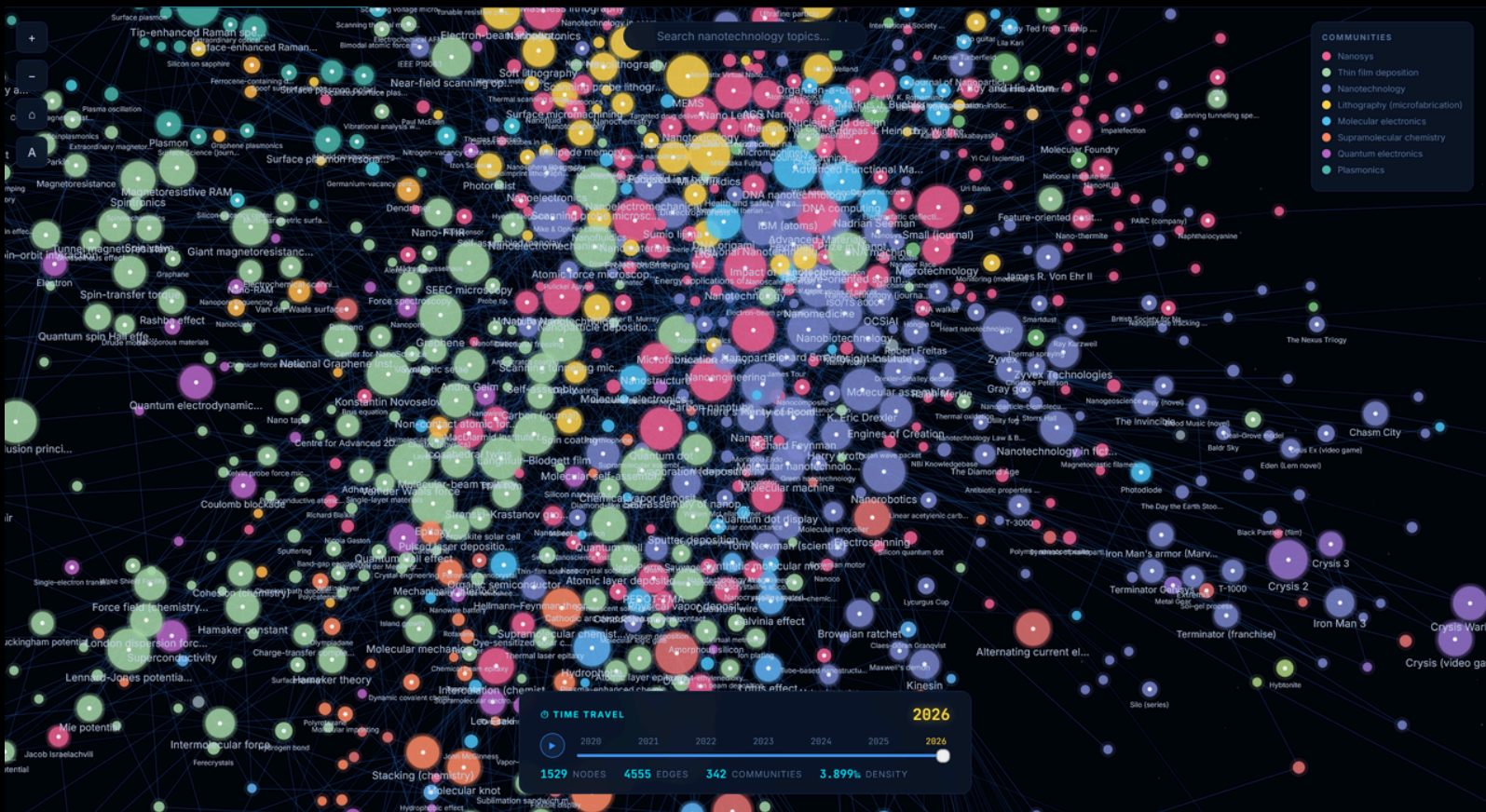
NANOTECH



VISUALS

NANOTECH

visualization shows how our innovation theme evolves over time, highlighting which ideas are rising, connecting, and shaping the future direction of the field.



```
from sklearn.metrics import mean_absolute_error, r2_score

mae = mean_absolute_error(results["Actual"], results["Predicted"])
r2 = r2_score(results["Actual"], results["Predicted"])

print("MAE:", mae)
print("R²:", r2)
```

```
... MAE: 7.135926346355359e-05
    R²: 0.9784600994542854
```


DEMO TIME



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