

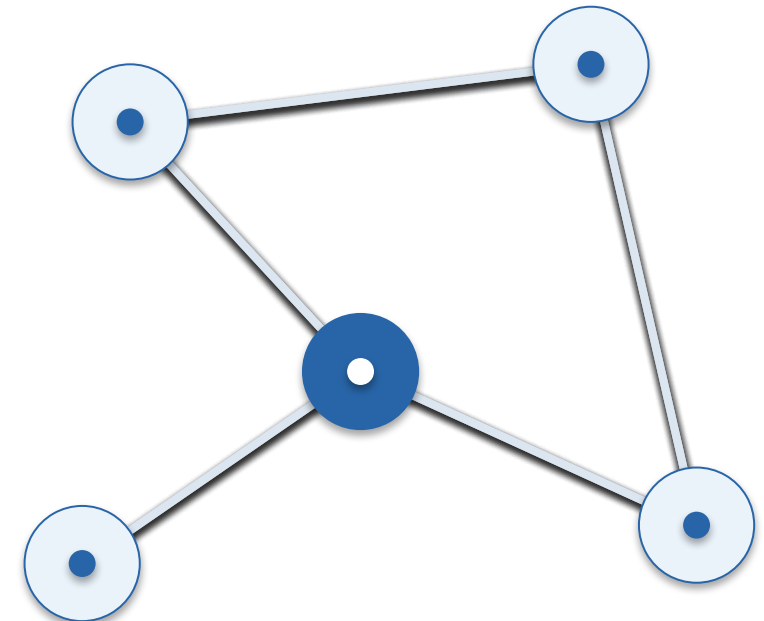
Research Interests and Background

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MY RESEARCH INTERESTS

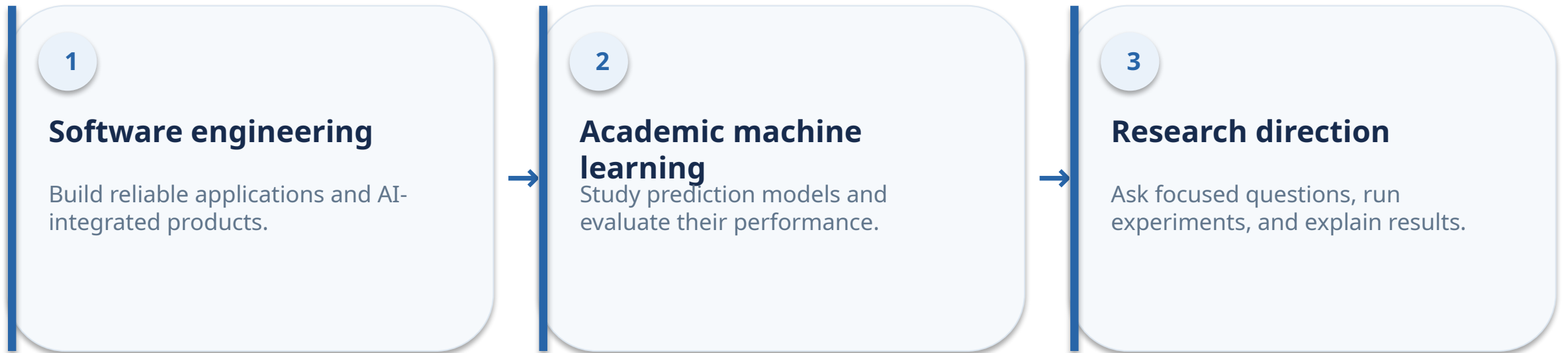
AI-driven networking & network intelligence

Network resource management and optimization



Why I want to pursue research

My engineering work and academic ML projects raised questions I want to investigate more systematically.



Thesis and published research

Comparing models, explaining performance, and learning how to evaluate results.

UNDERGRADUATE THESIS · 2025

Crop classification using ML

2,200 crop records · soil NPK, pH, rainfall, temperature and humidity

Compared six models in R and Python

WINNER Random Forest

99.77% (R) | 99.55% (Python)

Why: multiple trees reduce overfitting and handle complex feature relationships.

CO-AUTHORED PAPER · 2026

Early Type 2 diabetes prediction

Compared Decision Tree, Random Forest, SVM and ANN

Evaluated a stacking ensemble with cross-validation

WINNER Hybrid stacking ensemble

87.3% ± 1.2 accuracy | AUC 0.91

Why: combines complementary models; reported results are simulated, not clinical validation.

Software and AI projects

Products shaped by practical problems I experienced or observed.



NoTells

AI meeting assistant



DoctorX.pk

Doctor discovery and appointments



Tube Focus Mode

YouTube pauses when switching to code



Ideexa · planned

AI furniture removal and staging

Ideexa idea: real estate agents often struggled with empty or unattractive listing photos.

Where I want to focus

A broad starting point, to be refined through literature review and supervision.

1

Network intelligence

Understand network behavior using data and learning.

2

AI-driven networking

Support smarter network decisions and operations.

3

Resource optimization

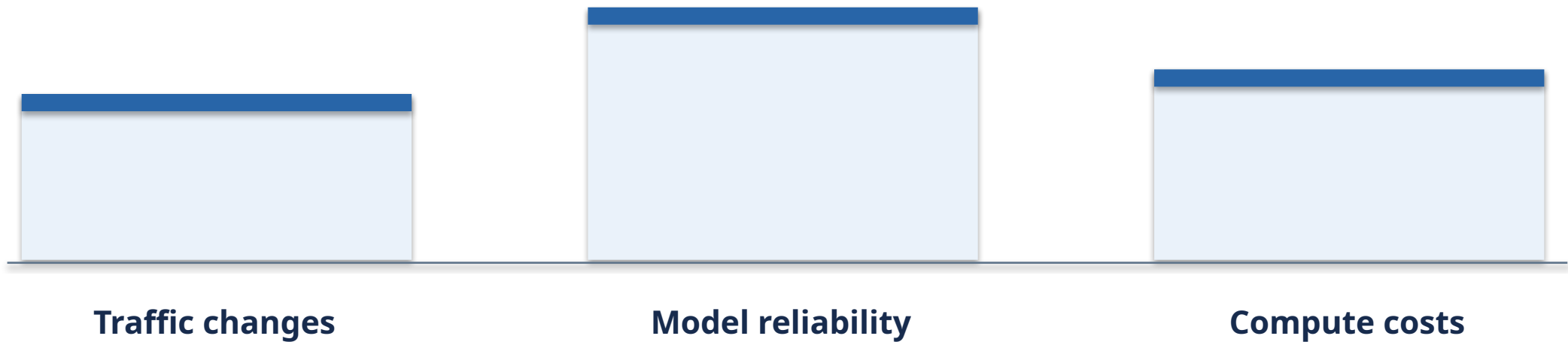
Improve allocation, efficiency, and performance.

Possible focused direction: encrypted traffic classification

Challenges in intelligent network management

Traffic demands and conditions change over time.

Key challenge: accuracy alone is not enough for practical networking systems.



An example topic to investigate

Encrypted traffic classification is one possible starting point—not a fixed thesis commitment.

How reliably can ML classify encrypted traffic when traffic patterns change?

Observe

Encrypted traffic flow



Classify

ML-based classifier



Test

Changed conditions

A practical research process

Start with the problem and baseline methods before proposing complexity.



Review & define

Literature review and focused question



Build & compare

Data, baselines, and controlled tests



Evaluate & refine

Results, limitations, and efficiency

How I would evaluate the work

Transparent experiments and reproducible results.

Classification

Precision, recall, macro F1

Robustness

Performance as traffic changes

Efficiency

Runtime and resource use

Reliability

Clean splits and leakage checks

Why I am interested in this group

The advertised areas closely match the directions I want to explore.

Research group interests

Network intelligence, AI-driven networking, encrypted traffic classification, and network optimization.

My background

Full-stack development, backend systems, AI-integrated products, and applied ML experience.

Goal: grow into rigorous, useful networking research

Thank you

I would welcome your guidance on selecting a focused and useful research question.

**Combine practical engineering with
careful research in AI-driven networking.**

Questions and discussion