

# Discrete differential geometry in homotopy type theory

Greg Langmead

Carnegie Mellon University

April 2025

# Motivation

- 1 Because 3D
- 2 Because 4D

# Motivation

- 1 Because 3D
- 2 Because 4D

# Domain 1

Domain 1

# Domain 2

Domain 1

# Domain 3

Domain 1

# Domain 4

Domain 1

# Codomain 1

Domain 1



# Codomain 2

Domain 1

# Codomain 3

Domain 1

# Results 1

Domain 1

# Results 2

Domain 1

# Results 3

Domain 1

# Results 4

Domain 1