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2011 Diploma, LMU Munich

2014 PhD, FU Berlin

TU Vienna

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Simons Institute Berkeley

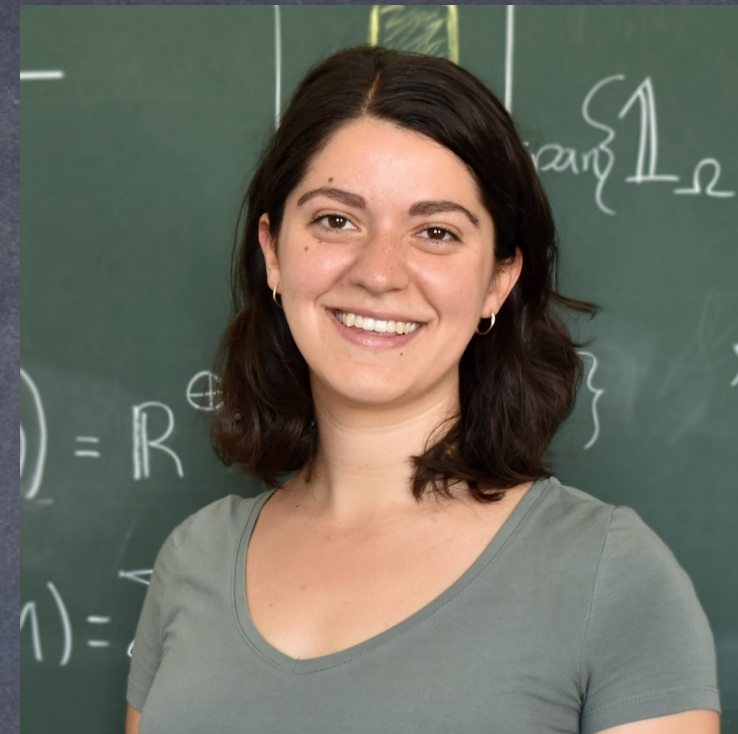
Since 2019 WASP assistant professor at KTH



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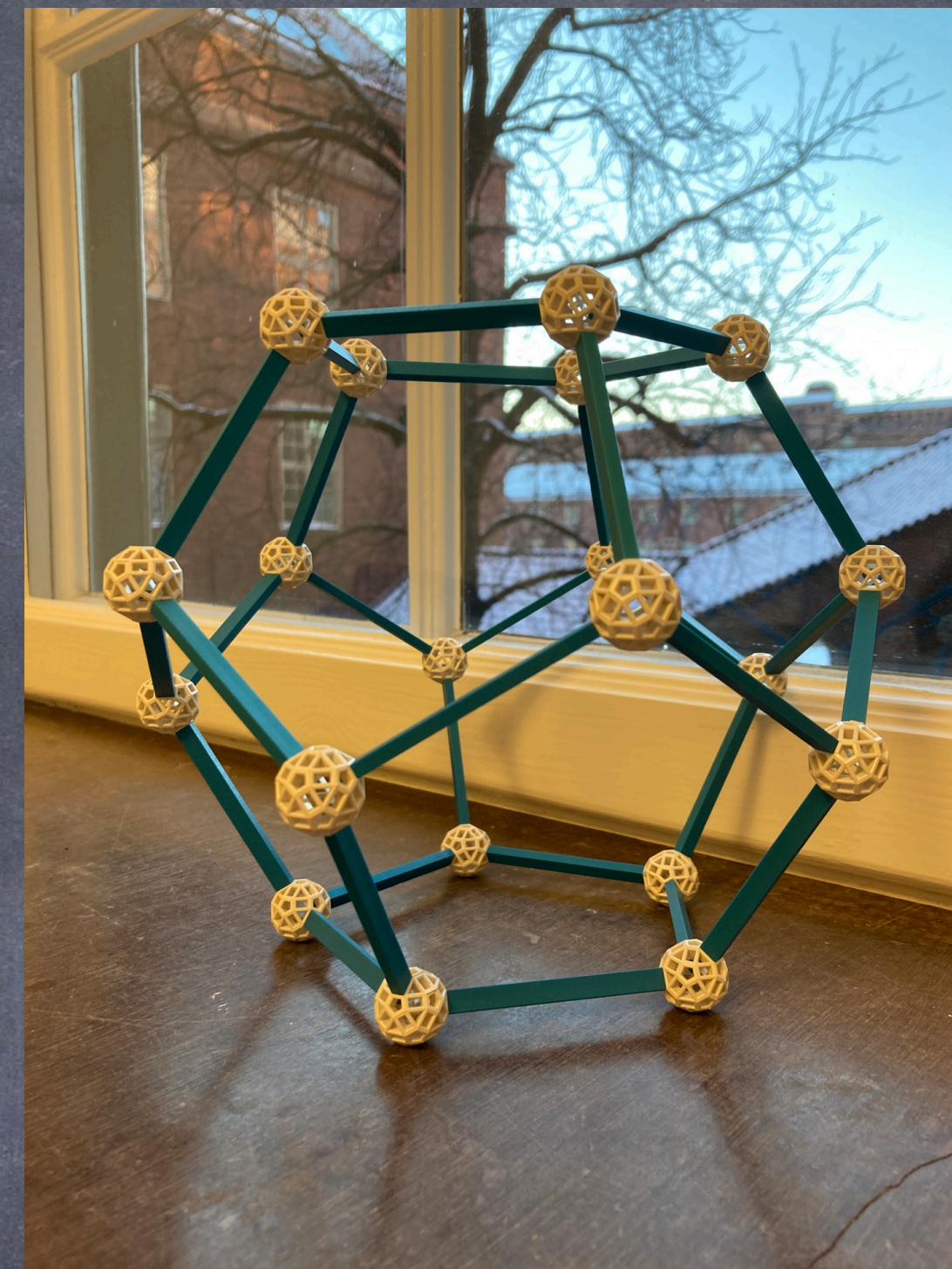
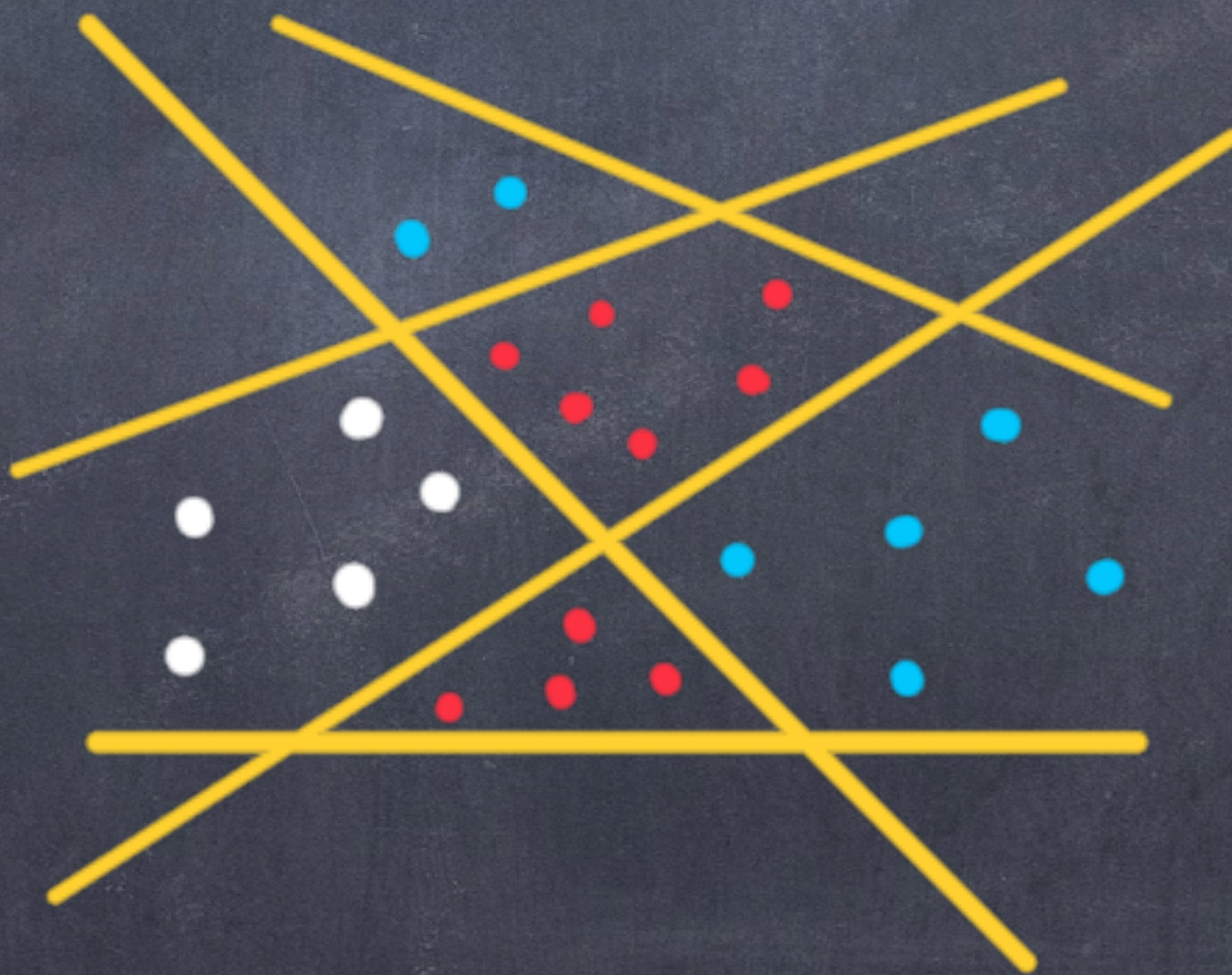
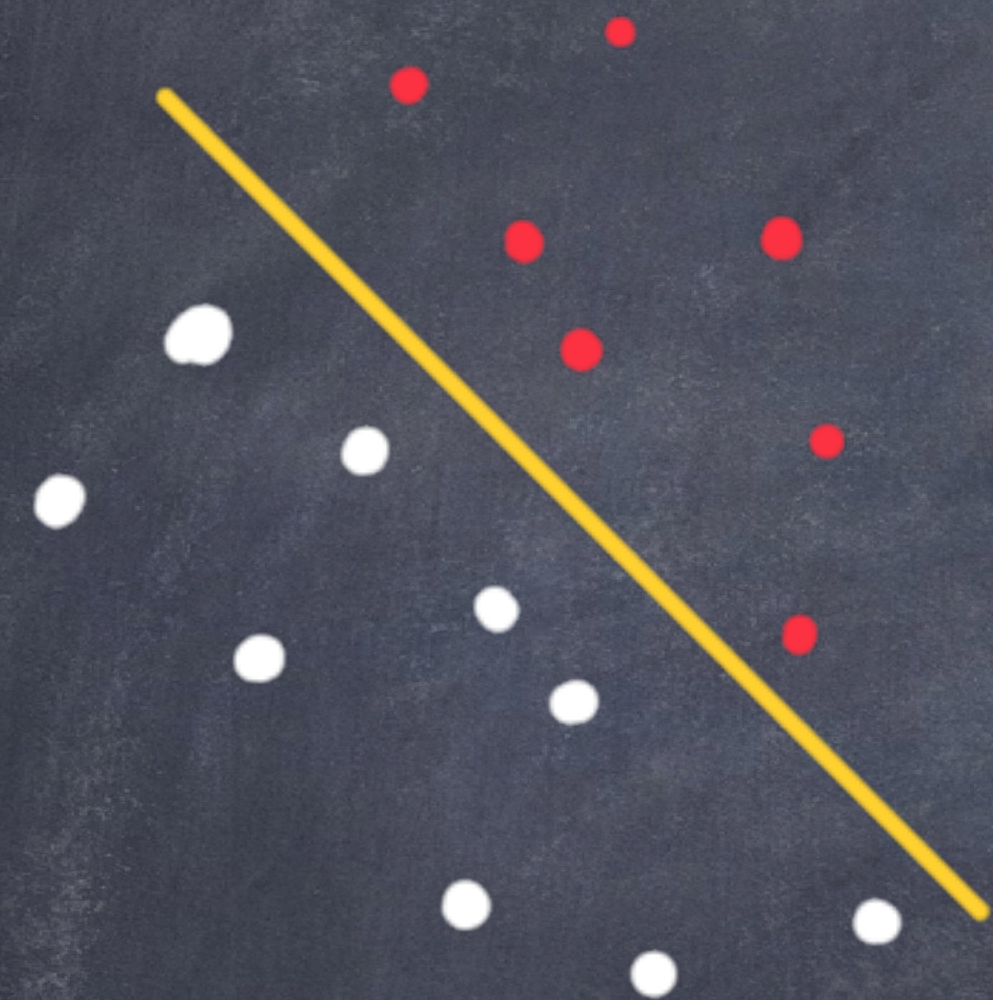
Göran Gustafssons Stiftelser

WASP | WALLENBERG AI,
AUTONOMOUS SYSTEMS
AND SOFTWARE PROGRAM

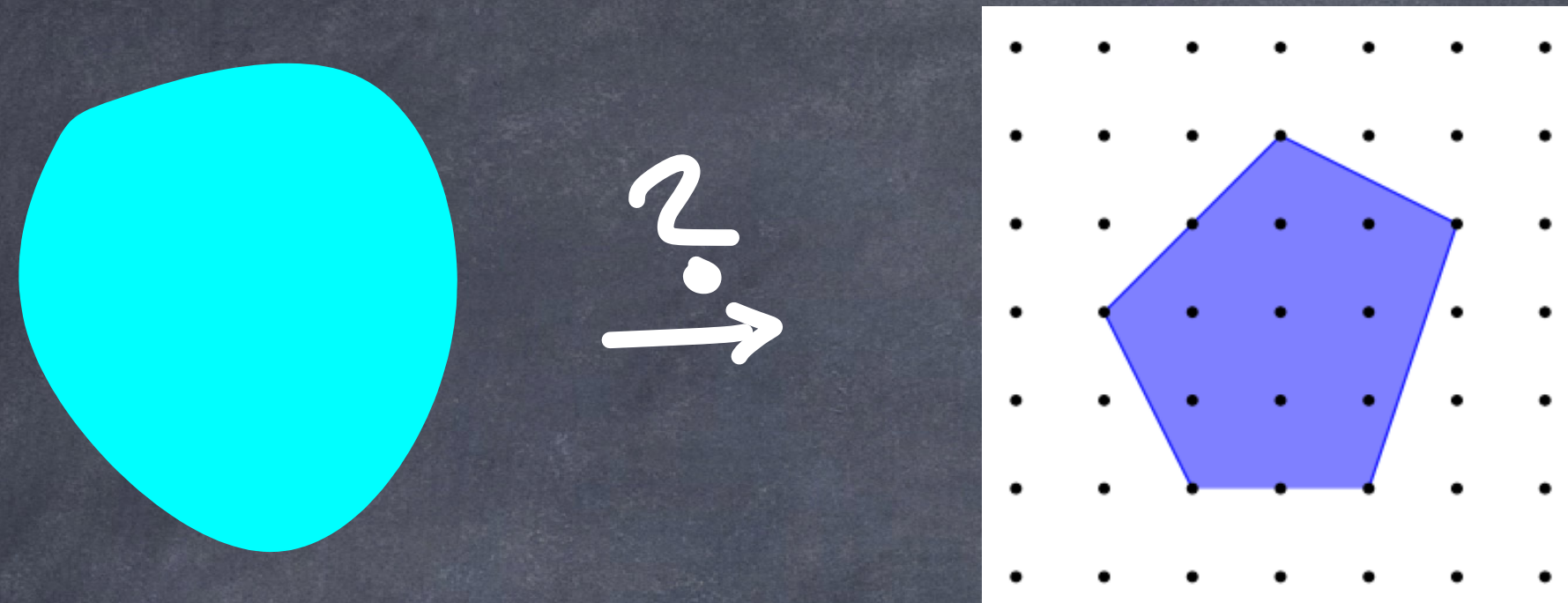


Vetenskapsrådet

Polyhedra and polytopes



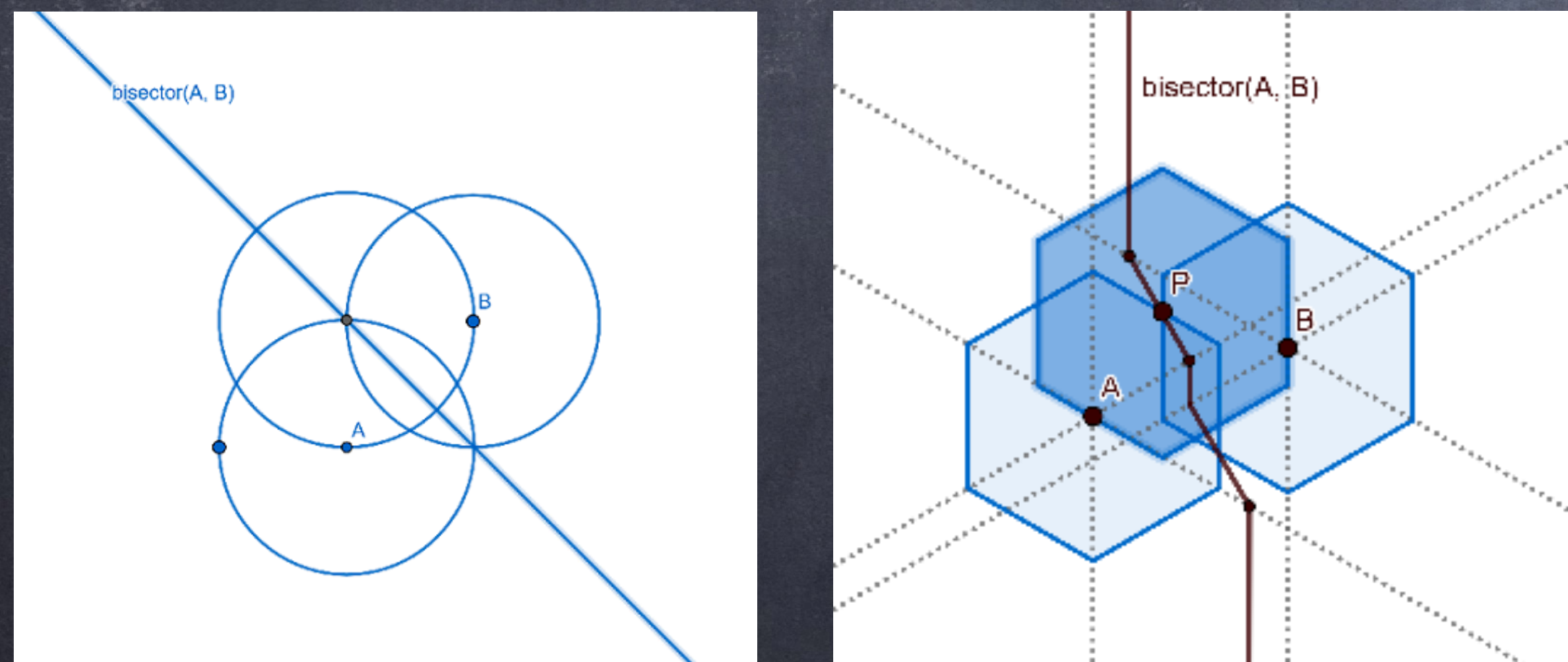
Discretizations



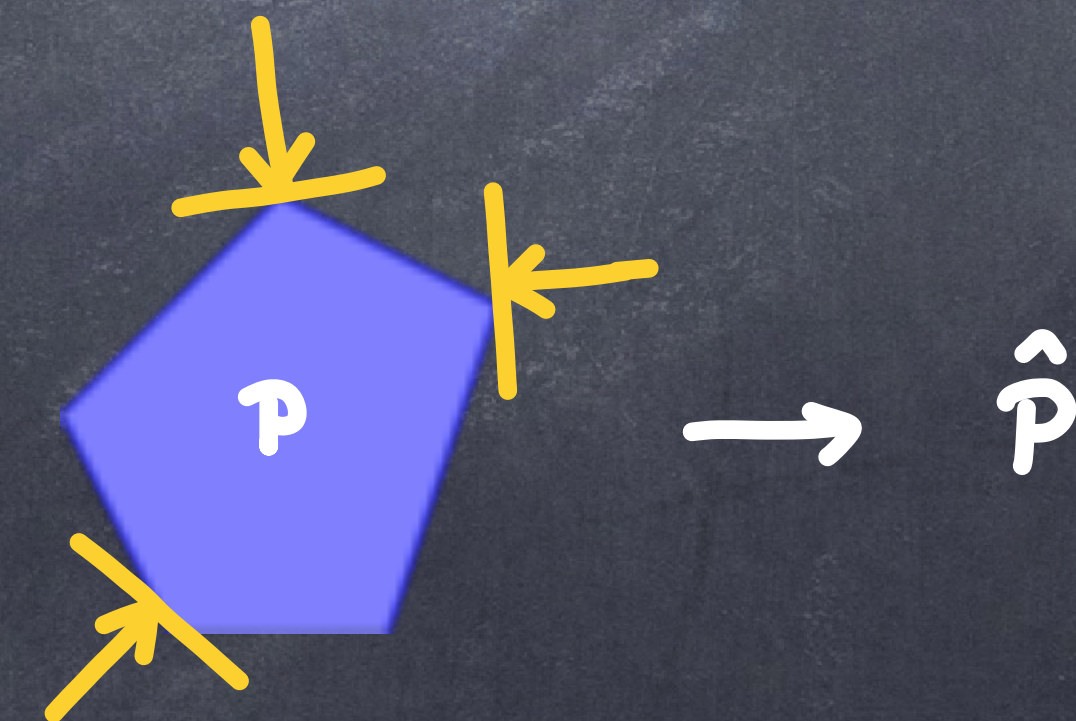
Geometric combinatorics



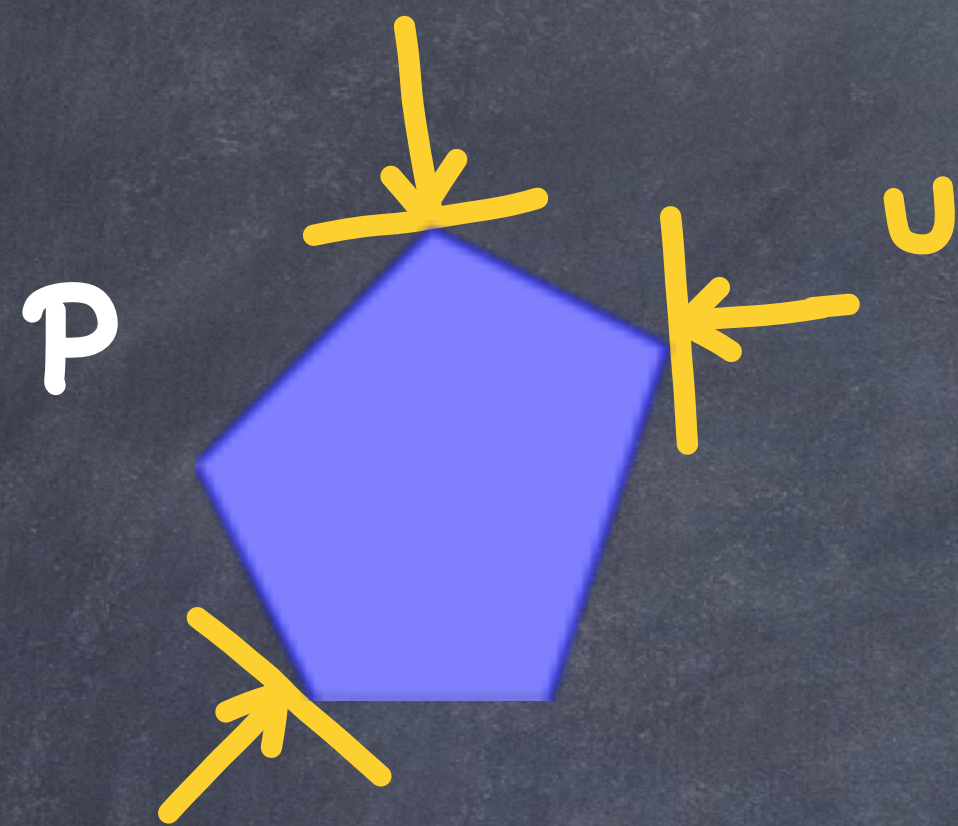
Metric geometry



Geometric tomography



Learning polytopes from support function evaluations



$$h_P(u) = \max_{x \in P} \langle x, u \rangle$$

support function

$$\text{data} : \left\{ (u^{(i)}, y^{(i)}) \right\}_{i=1}^m$$

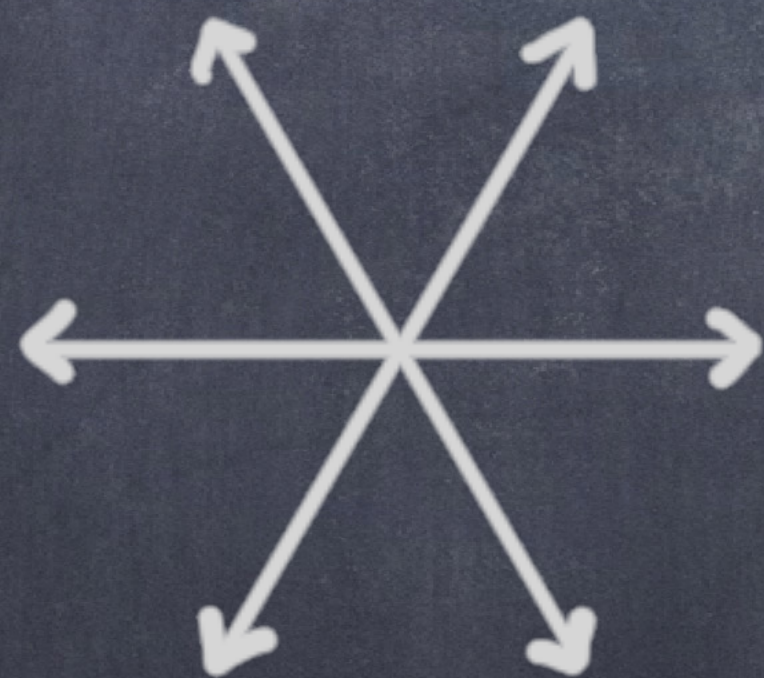
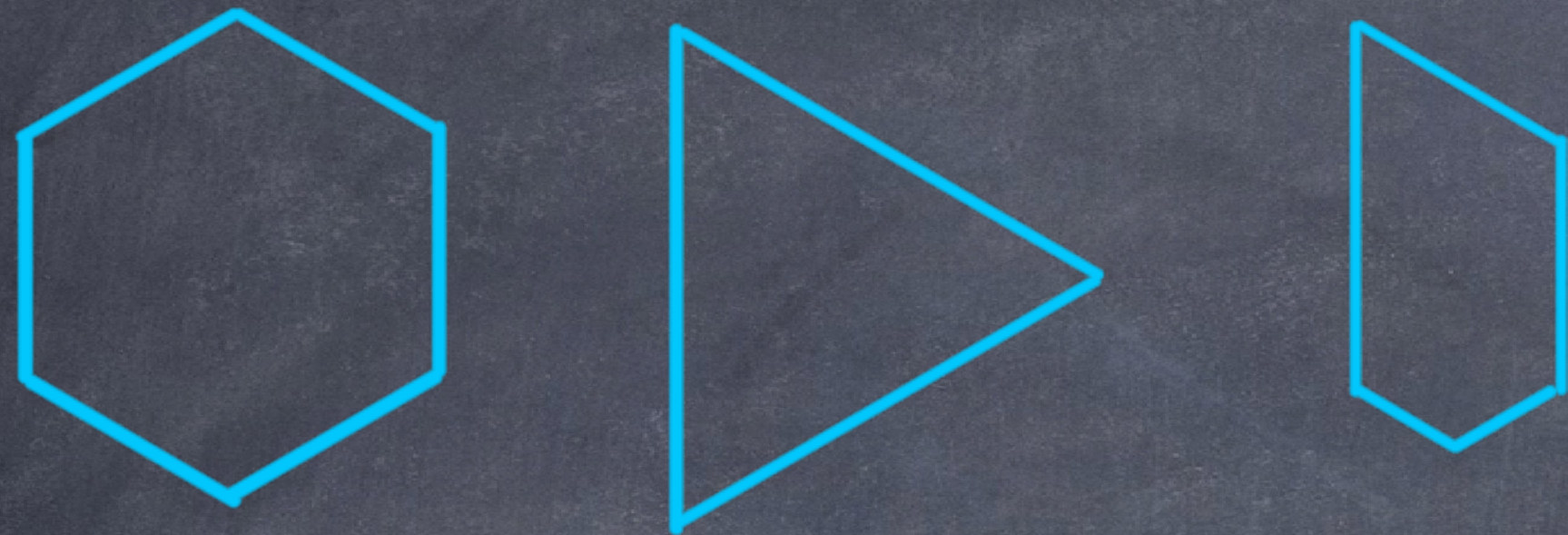
where

$$y^{(i)} = h_P(u^{(i)}) + \varepsilon^{(i)}$$

$$\hat{P} = \operatorname{argmin}_{Q \in \mathcal{K}} \frac{1}{m} \sum_{i=1}^m (h_Q(u^{(i)}) - y^{(i)})^2$$

least-squares estimate

Fixed facet directions



facet directions

Results

- $\hat{p} = \operatorname{argmin}_{h \in \mathcal{C}} \|A_v h - y\|$

- Uniqueness



- Convergence

$$\hat{p} \rightarrow p \quad \text{a.s.}$$