How can a taxi driver solve physics problems more effectively than a computer?

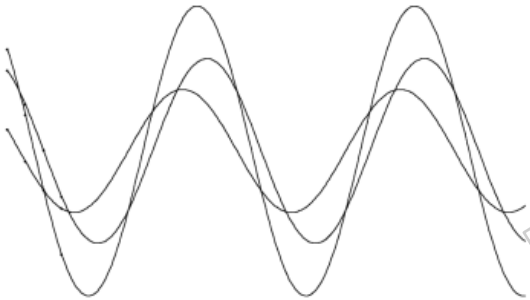
Jana B. Jarecki[1], Jacob Friis Sherson[2], & the CODER team[2]

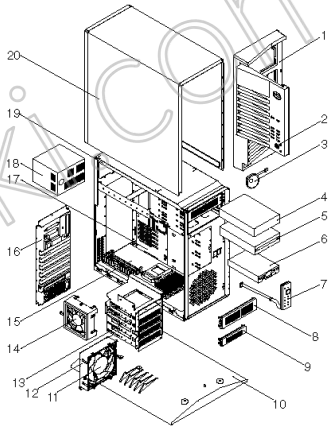
[1] Max Planck Institute for Human Development, Berlin, Germany
[2] Department of Physics and Astronomy, Aarhus University, Denmark

ABC
c&t talk

PROBLEM

Control of quantm systems





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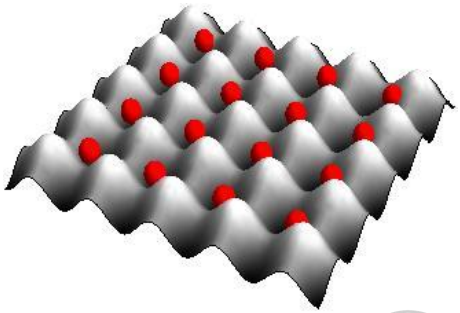
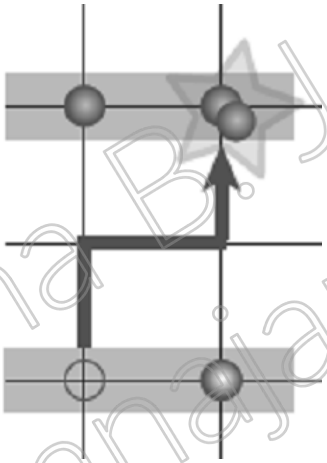
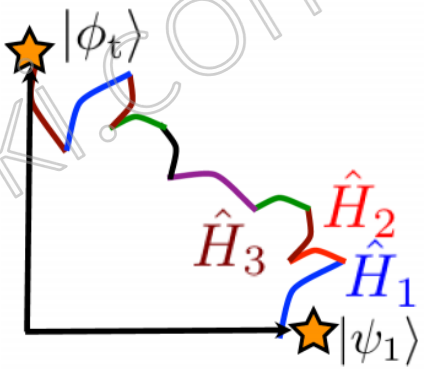
QUANTUM COMPUTER

Moving atoms in an optical lattice







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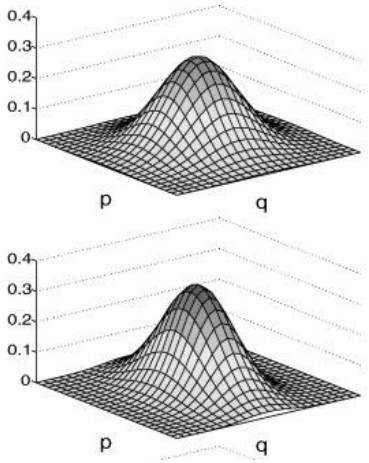
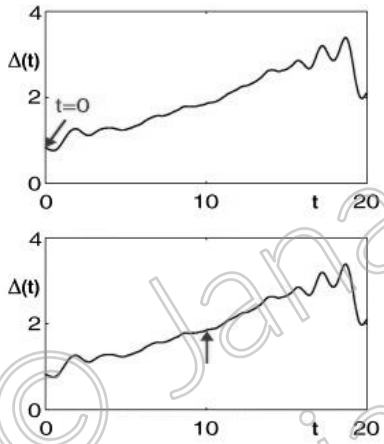
SEARCH

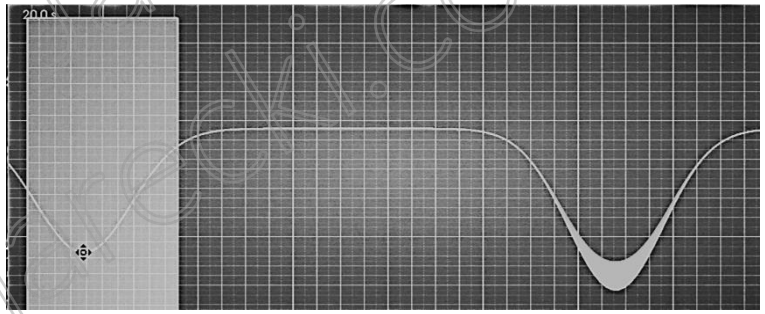
Games and algorithms

Local gradient descent algorithms





Crowdsourcing with gamification



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CITIZEN SCIENCE

Conducted by nonprofessionals

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EFFORT

Games and algorithms

Local gradient descent algorithms	Crowdsourcing with gamification
740 000 000 trials	12 000 Trials
2 months	6 months

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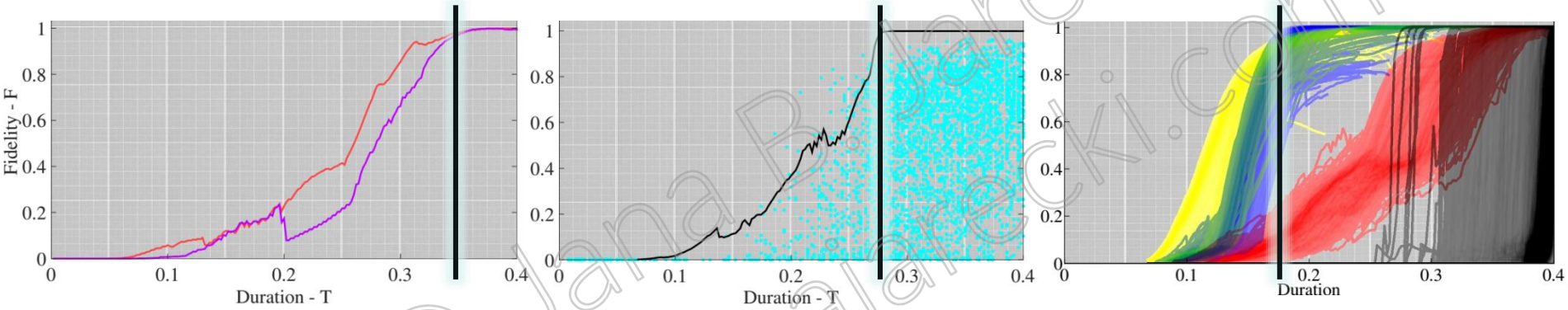
PERFORMANCE

Man vs. machine

Standard algorithm

Best of several algorithms

Using human solutions



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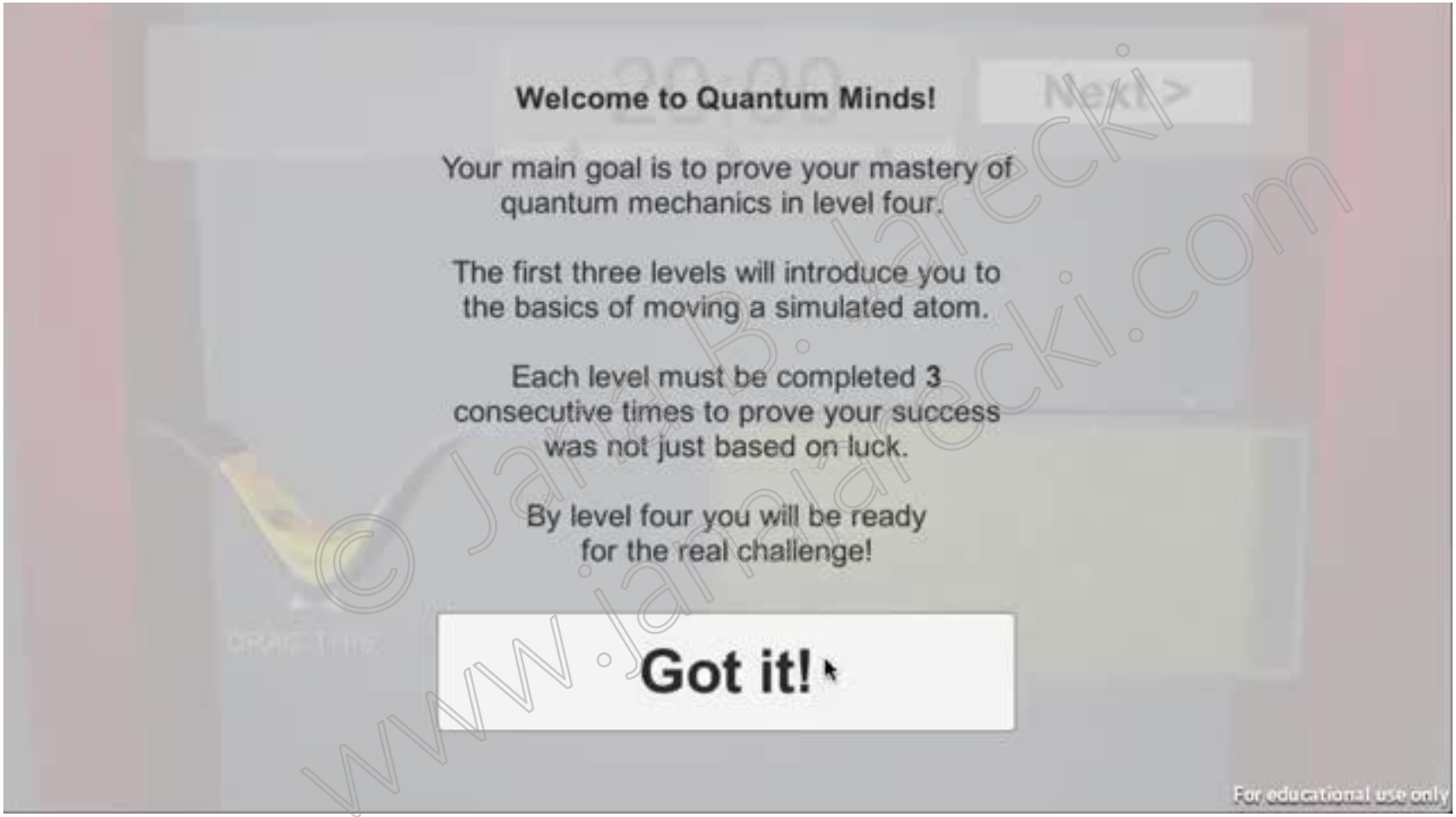
QUANTUM MINDS

Gamified learning



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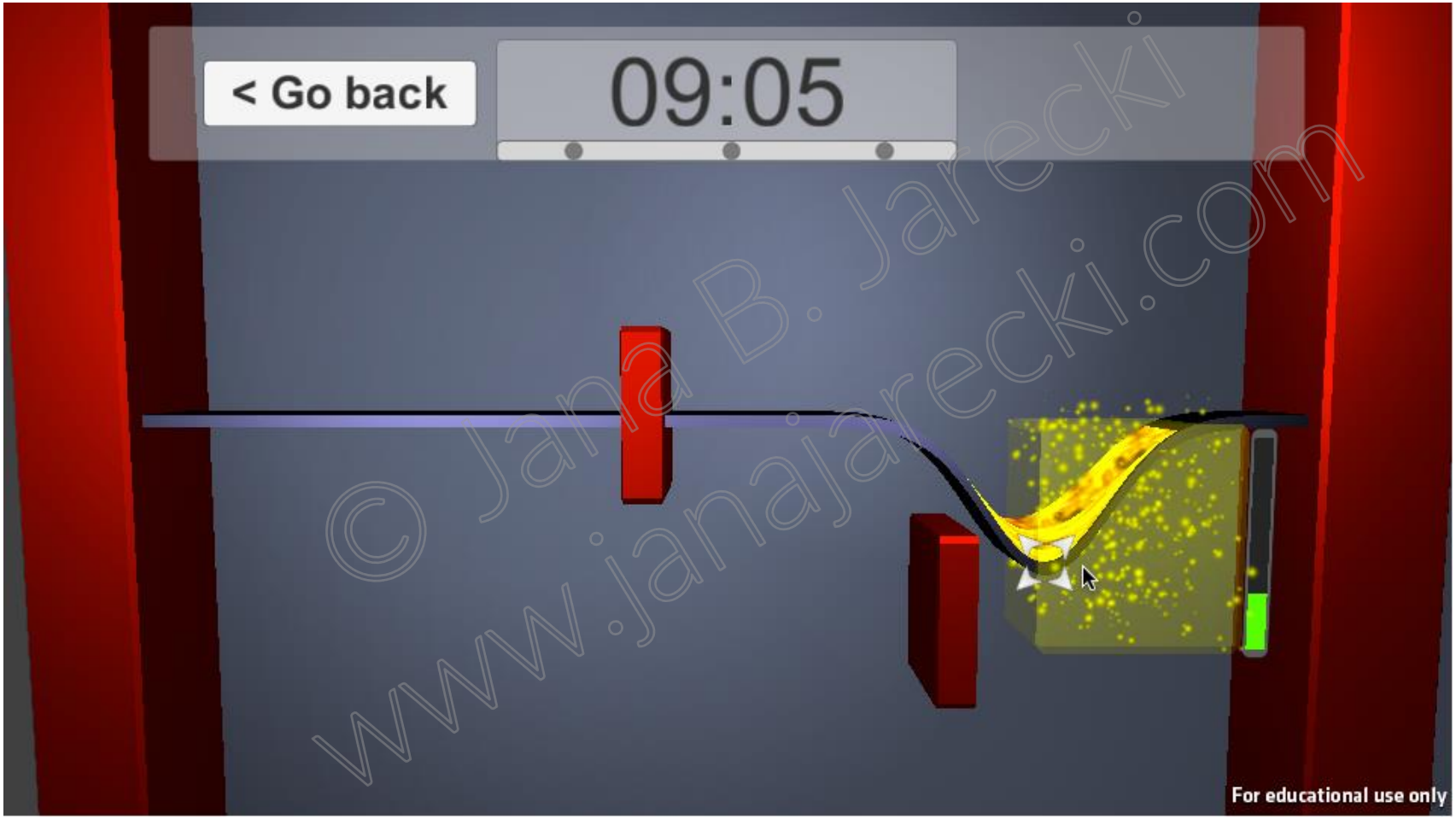
QUANTUM MINDS

Gamified learning



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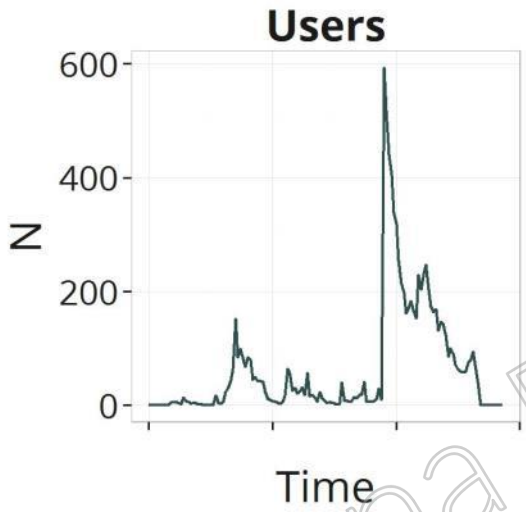
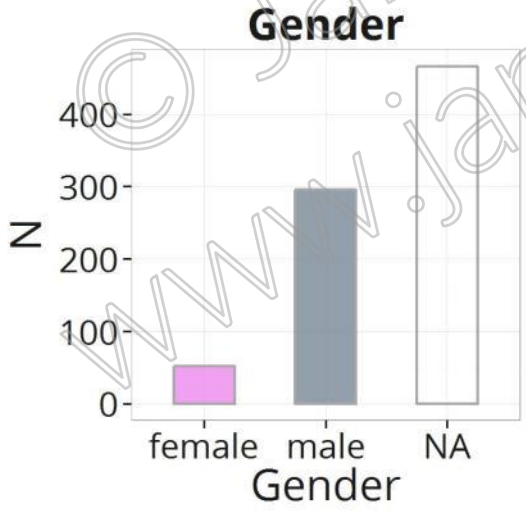
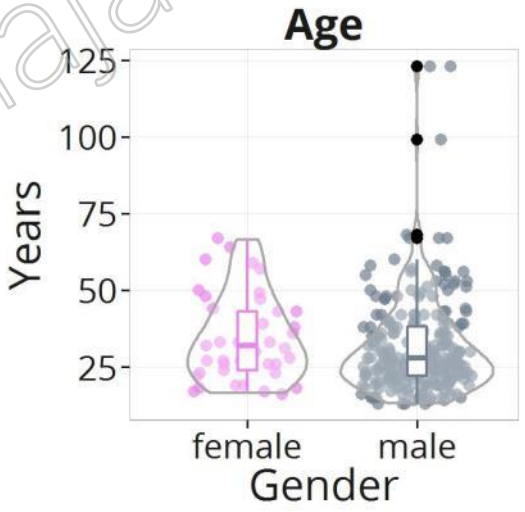
DEMOGRAPHICS

varied







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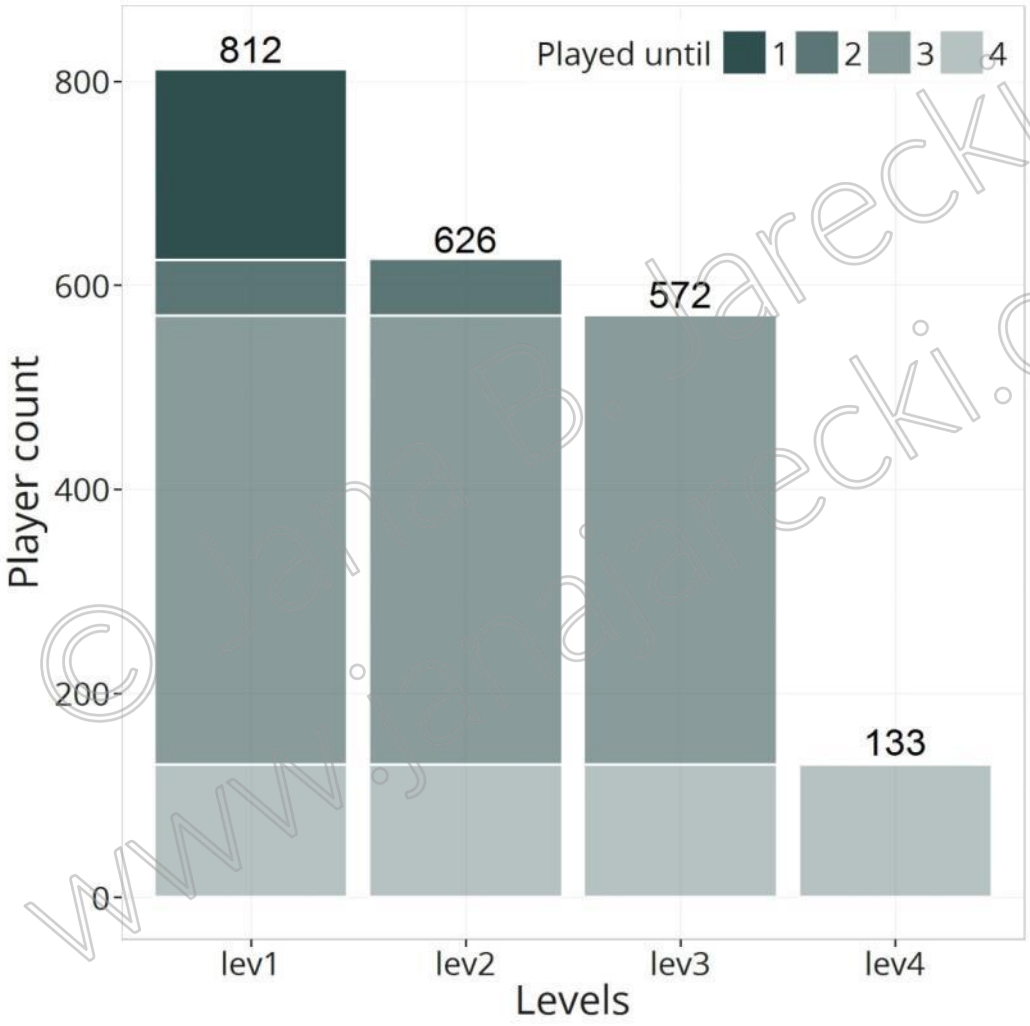
SUCCEEDING

Across the levels



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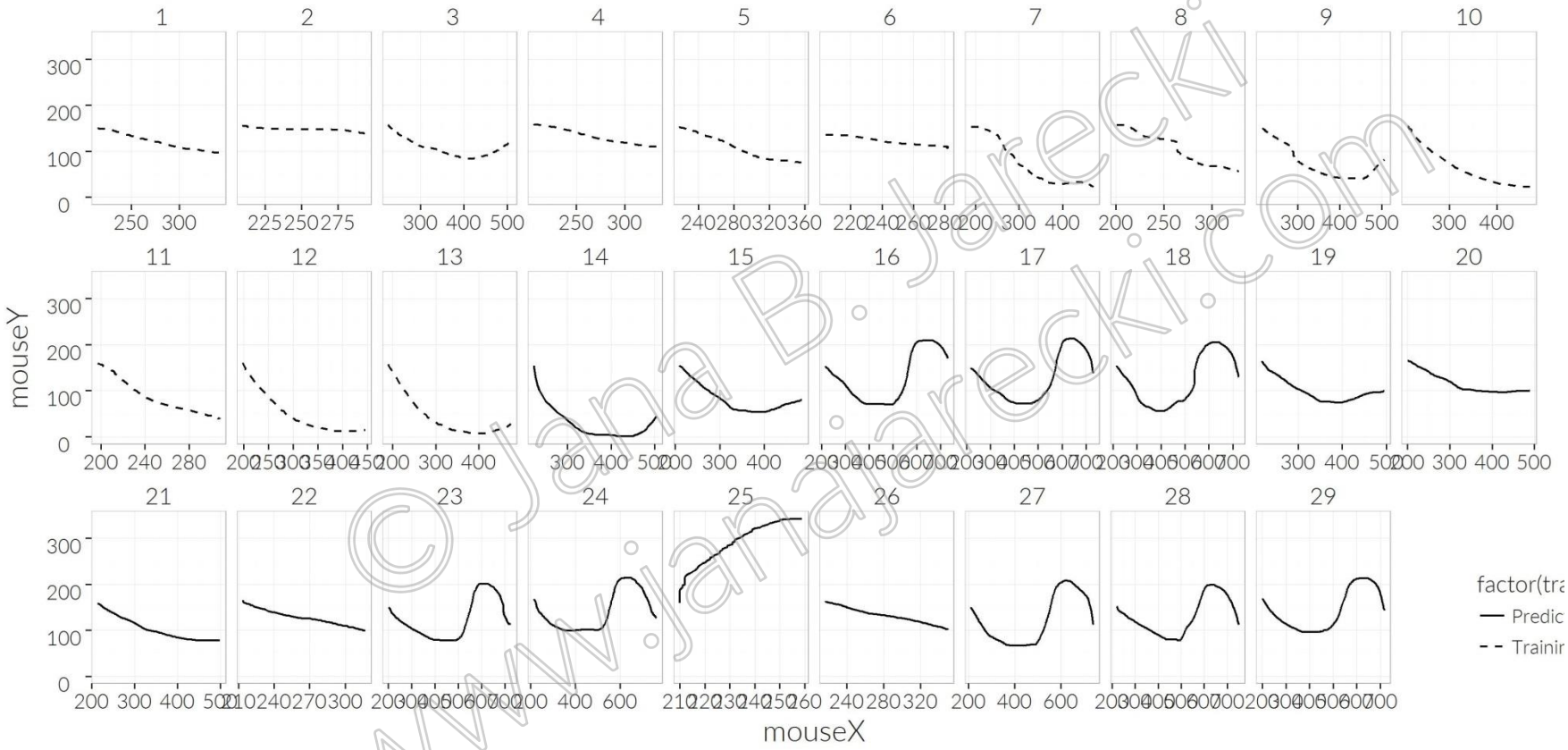

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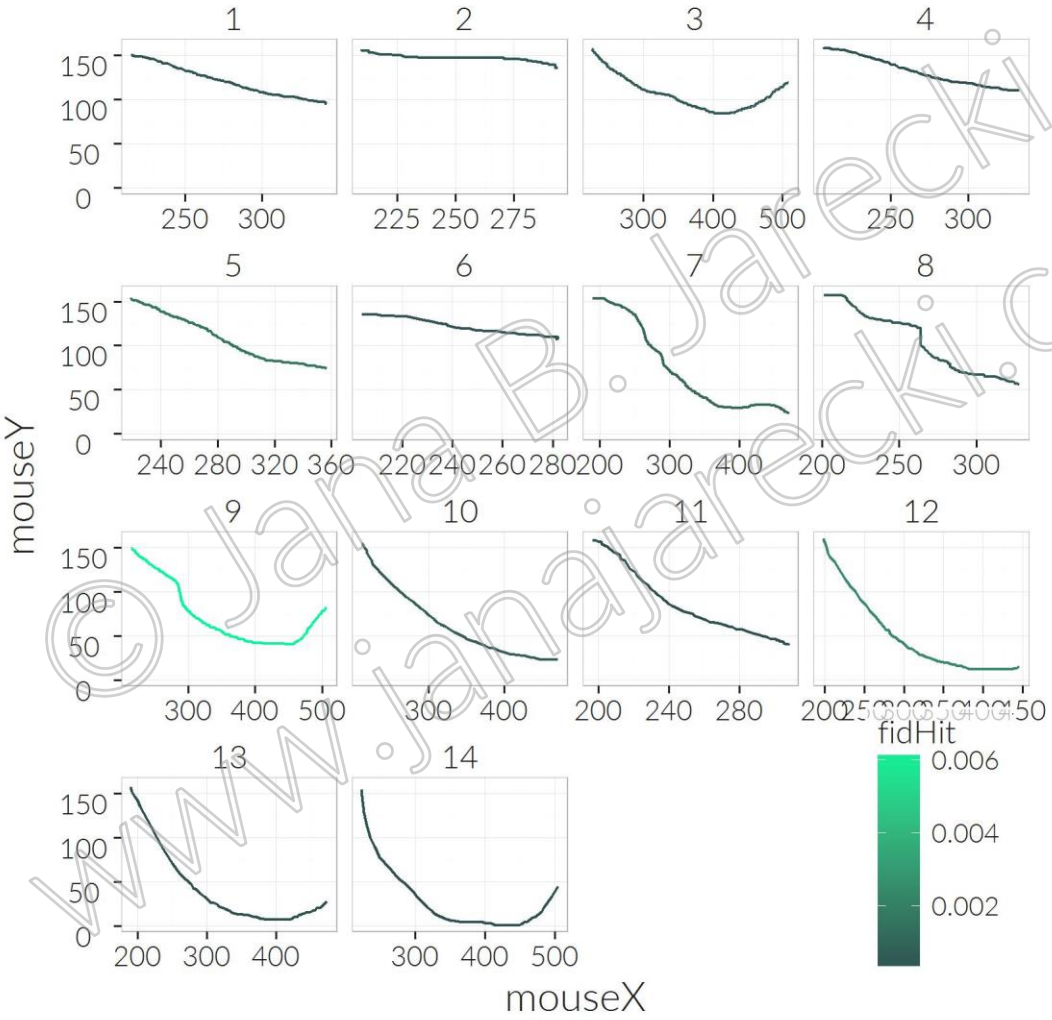

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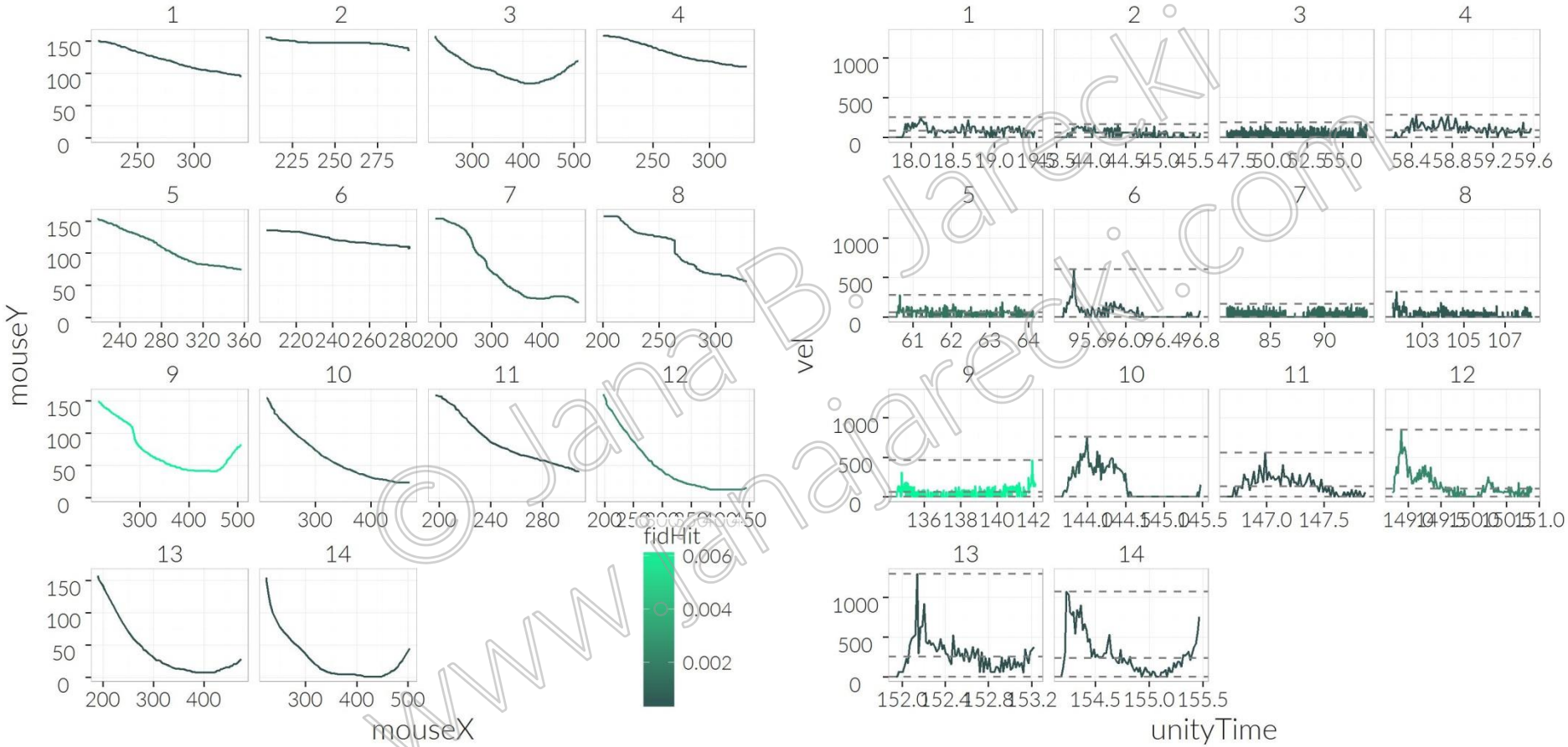

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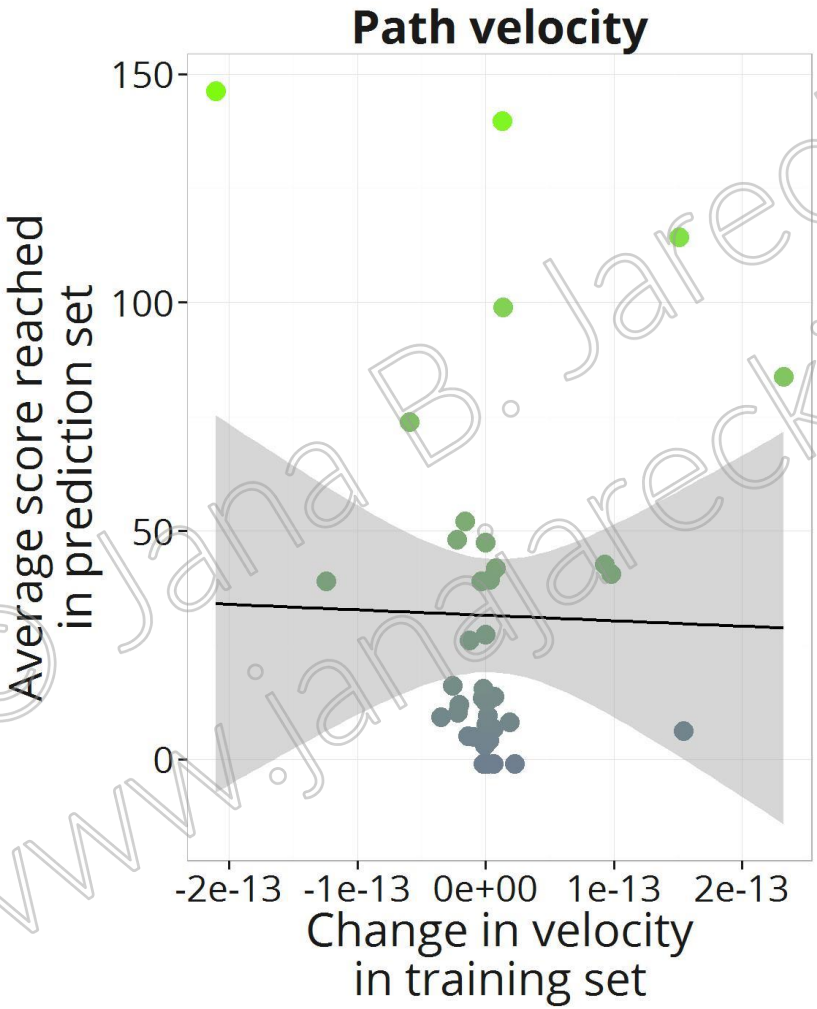

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