

TRAINING A QUANTUM WORKFORCE: BB84

LUKAS MAIRHUFER • UAS TECHNIKUM WIEN

BB84 KEY EXCHANGE:



- POLARISATION ENCODES BIT
- Two BASIS: + & X
- CORRELATED BASIS: KEY
- UNCORRELATED BASIS: DETECT EAVESDROPPING

COMMERCIAL TRAINING SETUP:

- CW LASER
- MANUAL POLARIZERS
- LIGHT IN BOTH DETECTORS
- CHIP DECIDES WHICH CLICKS

→ SIMULATION

Our Setup

- DRITIALIZED POLARIZERS
- SINGLE PHOTON SOURCE: ECDL
- SINGLE PHOTON DETECTORS
- COUPLING TO FIBER OR SOME FREE SPACE
- SPATIAL SEPERATION OF ALICE, BOB, EVE
- TRAIN AI TO DETECT EAVESDROPPING

→ TRUE QUANTUM SETUP

PROJECT GROUPS DEVELOP SETUP

- ELECTRONICS
- AI
- OPTICS
- DESIGN
- CYBER SECURITY

WEB-BASED SIMULATION

- CAN ALICE & BOB DETECT EAVESDROPPING?
- WILL BE AVAILABLE TO GENERAL PUBLIC