**Louis Tessler**
[online version]
[contact info redacted]

**Education**

*NYU Polytechnic School of Engineering, Brooklyn NY* *May 2014*
BSc in Math and Physics, concentration in Nuclear Engineering, minor in Computer Science
Grade point average 3.405 (Cum Laude)

**Pertinent Coursework**

| | | |
|---|---|---|
| Mathematics | : | Numerical Analysis, Partial Differential Equations, Chaos and Dynamical systems, Linear Algebra (graduate level), Discrete math, Real Analysis. |
| Physics | : | Computational Physics, Applied Nuclear Physics, Cosmology, Radiation and Dosimetry, Quantum Mechanics, Mathematical Physics |

**Technical Skills**

| | | |
|---|---|---|
| Programming languages | : | C++, C#, Python, matlab, actionscript 2.0, labview (limited) |
| Programming libraries | : | XNA (C#), Pyserial (Python), Matplotlib (Python), Tkinter (Python) |
| Lab / Machinery | : | Oscilloscope, Function Generator, Arduino micro-controller, Band saw, Drill-press, Lock-in Amplifier. |

**Professional Experience**

*Technical staff at Riken, Wako JP* *October 2017-present*
- Improved and maintained QuTip quantum information package

*Researcher at NYU Shanghai, Shanghai CN* *2015-2017*
- Validated a scheme for quantum error correction
- Found relativistic correction to entanglement purification criteria
- Contributed to paper on Grover's algorithm
- Used Principal Component Analysis to examine quantum algorithms
- Acted as Editorial Board Member for Science Direct journal submission

*Researcher at SLAC National Accelerator Laboratory, Menlo Park CA* *Summer 2014*
- Created and tested a program to control, take data from and display the results of a Scanning Transmission X-Ray Microscope (STXM) in use at a synchrotron.

*Researcher at NYU Polytechnic School of Engineering, Brooklyn NY* *Summer 2013*
- Numerically simulated the behavior of quantum systems in 1 and 2 dimensions.
- Considered both time independent and time dependent cases.
- Heavy focus on the particulars of how atomic excitations occur.

*Freelance tutor via wyzant.com, New York NY* *2012-2013*

**Publications**

Byrnes T, Forster G, Tessler L, (2018), *Generalized Grover's algorithm for multiple phase inversion states* Physical Review Letters

Tessler L, Byrnes T, (2018) *Bitcoin and quantum computing,* Manuscript submitted for publication

Byrnes T, Ilyas B, Tessler L, Takeoka M, Jambulingam S, Dowling J P, (2017), *Lorentz-invariant entanglement distribution for the space-based quantum network*, Manuscript submitted for publication

Ebubechukwu O. Ilo-Okeke, Tessler L, Dowling J P, Byrnes T, (2017), *Remote quantum clock synchronization without synchronized clocks*, Manuscript submitted for publication

Tessler L, Bergmann M, Loock P V, Byrnes T, Quantum error correction for an alphabet of states, Manuscript in preparation

Tessler L, Byrnes T, *A self-correcting quantum memory with ensembles of qubits,* Manuscript in preparation

**Talks**

September 2017: Lorentz-invariant entanglement distribution for the space-based quantum network

Short talk presented at Asia Quantum Information Science conference, Singapore

**Noteworthy projects**

Cenozoic 2018 (ongoing)

Machine learning for automatic pricing of online goods and services.
Developed process to efficiently turn sales data into statistics in real time.
Developed reliable way of using statistics in pricing strategy (exploit v. explore)
Built server back end and launched on AWS.

Laosh.io 2016

Attempted internet business focused on the education market in China. Responsible for front end and business development. Engaged in challenges outside of my technical focused core competency.

Inverse 2014

Designed and built a game about physics and movement in a world of optical illusions.

*Crowd Modeling* *2014*

Designed and implemented a model of a crowd of people in a confined space with applications in designing evacuation safe buildings and more efficient passageways.

*Future Echo* *2013*

Designed and built an "edutainment" game about visualizing the speed of light delay.

**Awards and Activities**

| | | |
|---|---|---|
| Awards | : | Dean's list (Fall 2012, all of 2013 and 2014), Accomplished competitor 2012 University Physics competition. Winner Hero city hackathon for best bitcoin idea (2014) |
| Competitions | : | Google Games (2013), IEEE xtreme programming competition (2013), 2012 University Physics competition, FIRST robotics competition (2008,2009) |
| Professional organizations | : | Polybots robotics club, APS, IEEE |