

**Andrew Kane**

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## **Summary:**

Highly creative, and independent engineer, programmer, and inventor with a wide variety of fabrication skills.

## **Experience:**

- Invented the Fragball (patent pending), a soft reusable grenade toy that launches balls in all directions. Developed rubber injection molding manufacturing process for same.
- Designed and documented a wide variety of automated coil manufacturing machines and tooling based on unique customer requirements.
- Designed, built, and programmed a toy dart manufacturing machine
- Designed, published, built, and sold dozens of unique toy guns.
- Led classes where children and adults construct a rudimentary toy “Nerf” gun.
- Taught new employees many technical skills including CNC machine tool operation, machine design using CAD, and precision measurement.
- Built, upgraded, and maintained 3d printers.
- Programmed Cak3d, a CAD and 3d printing program for designing and printing rotationally symmetrical parts with ideal pathing for constant extrusion.
- Programmed Not A Slicer, a CAD and 3d printing program for manually defining paths to print simple objects.
- Programmed several computer games, including educational games, games in Spanish, and multiplayer online games.

## **Skills:**

- Mechanical design and CAD (Solidworks, Inventor, and AutoCAD)
- Mechatronics with servos, steppers, and pneumatic components.
- CNC Machine tool use including mills, lathes, and screw machines

- Manual machine tool use (mills and lathes)
- 3d Printing with FFF/FDM plastic filament machines
- Soldering and electronics assembly including surface mount components.
- Electronics troubleshooting and repair
- Silicone rubber casting and injection molding
- Web Development (HTML, Javascript, Node.js, Socket.io, AWS)
- Fortran, C++, C#, Arduino, Python, BASIC, Excel
- Maple, IDL, Marc/Mentat and MUDPACK
- Microsoft Office, LibreOffice, LaTeX, Windows, Linux

## **Education:**

- B.A. Physics, Lawrence University
- B.A. Philosophy, Lawrence University.

## **Work History:**

- *Inventor & Toymaker*, 2009-Present
- *Freelance and FOSS Software Developer*, July 2020-Present
- *Social Worker*, Hope Human Services, August-October 2020
- *CNC Machine Operator*, HardKore Productions, October 2015-2019
- *CNC Machine Operator*, GKN Waltersheid, May-July 2015
- *Electronics Technician*, Silicon Engines, September 2014-April 2015
- *Electronics Technician*, Peerless AV, May 2014-December 2014
- *Mechanical Designer*, Machine Control Specialists, December 2008 -January 2014
- *Electronics Technician*, Machine Control Specialists, Sept. 2008-July 2009
- *REU Intern*, University of Minnesota Civil Engineering Department (concrete materials testing research), Summer 2007
- *Cashier*, Wendy's, Summers 2004-2006