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# Genetic Algorithm

— Kyla Harper —

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# What Is It?

- Mimics Evolutionary Theory
- Finds solution(s) to big problems
  - Antenna shapes that produce the most radiation patterns
- It's Cool!



# How Does it Work?

1. Generates a random starting point
2. Fitness evaluation
3. Build next population
  - a. Mutations
  - b. Predation
4. Repeat 2 and 3 until stop conditions are met

# First Population - Everything is Terrible!

- [BoxCar 2D](#)
- [MarIO](#)

# It starts to get better

- Populations begin to merge on solutions
- Speciation/Patterns of populations develop

# Solution is Found (Hopefully)

- Something “good enough”
- Premature convergence

# In Conclusion

- Can find complicated solutions
- Produce interesting results