Predicting Pollen for Allergy Management

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EarthLab Showcase
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Motivation

• ~30% of US population suffers from allergies
  • Significant health and financial burden

• Climate change
  • Temperature -> lengthen the pollen season, increase pollen concentrations
  • CO$_2$ -> increase pollen production and pollen potency

• Allergies can be successfully treated
  • Pre-treatment with medication
  • Pollen avoidance
Pollen Model

Environmental variables

Days with missing obs
Locations with no obs

Increase resolution

Machine Learning Random Forest Models

Forecast

Start of pollen season
High pollen days
Climate projections
Next steps

• Improve the pollen model: spatial extent
• Develop climate indicators of pollen
• Operationalize the short-term forecast
Thank you to our pollen data providers

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