

# Plankton Classification with Deep Neural Network

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## Dataset

## WHOI-Plankton

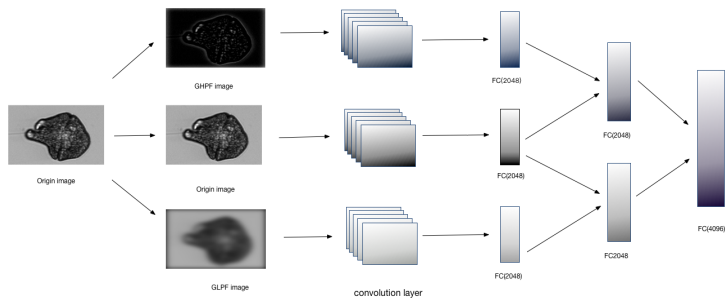
Models	resource	Classes amount	amount
Training	Images collected in 2006-2013	103	3233806
Testing	Images collected in 2014	98	329834

Table: Dataset1

Models	resource	Classes amount	amount
Training	Images collected in 2013	98	115951
Testing	Images collected in 2014	98	63633

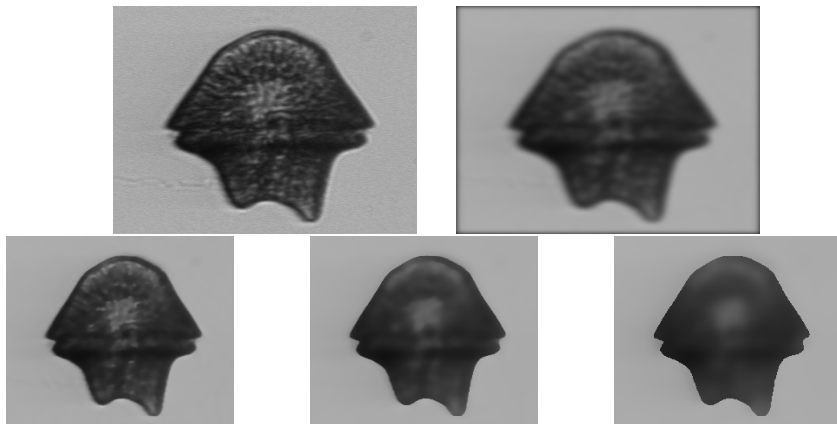
Table: Dataset2

# Architecture of Neural Network



- 3 channels CNN(share same label)

# Bilateral Filtering



# Experiments Results

Models	Accuracy
AlexNet trained on origin images	87.51%
AlexNet trained on BF images	81.95%

**Table:** Experiments Results of Plankton Classification

# Database

Data	Total	Mix	Deleted 4 classes	Rest 98 classes
2013	394234	278283	0	115951
2104	329834	266156	43	63633

Table: Database Analysis

Thanks for your attention !



# Q & A